

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE EASTERN DISTRICT OF TEXAS
3 MARSHALL DIVISION

4 PACKET INTELLIGENCE LLC)(CIVIL DOCKET NO.
5)(
6)(2:16-CV-147-JRG
7)(
8 VS.)(MARSHALL, TEXAS
9)(
10)(
11 SANDVINE CORPORATION AND)(NOVEMBER 7, 2017
12 SANDVINE INCORPORATED ULC)(1:10 P.M.

13 TRANSCRIPT OF JURY TRIAL

14 BEFORE THE HONORABLE JUDGE RODNEY GILSTRAP

15 UNITED STATES DISTRICT JUDGE

16 APPEARANCES:

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13 *****

14
15 P R O C E E D I N G S

16 (Jury out.)

17 COURT SECURITY OFFICER: All rise.

18 THE COURT: Be seated, please.

19 All right. Mr. Bowman, if you'll return
20 to the witness stand, please.

21 And, Mr. Buresh, you may go to the
22 podium.

23 And, Mr. Nance, would you bring in the
24 jury, please?

25 COURT SECURITY OFFICER: All rise for the

1 jury.

2 (Jury in.)

3 THE COURT: Welcome back from lunch,
4 ladies and gentlemen, please have a seat.

5 We'll continue with the Defendants'
6 direct examination of the witness, Mr. Bowman.

7 Mr. Buresh, you may continue.

8 MR. BURESH: Thank you, Your Honor.
9 If we can return to the PTX-381.

10 DON BOWMAN, DEFENDANTS' WITNESS, PREVIOUSLY SWORN

11 DIRECT EXAMINATION (CONTINUED)

12 BY MR. BURESH:

13 Q. Mr. Bowman, before we left off, we were
14 talking about the text on the screen in front of you
15 about priming, do you see that?

16 A. I do.

17 Q. Before lunch, was it your testimony that this
18 first sentence is inaccurate as a description for
19 priming in the PTS products?

20 A. That's correct. This is not an accurate
21 description of the priming aspect of the Sandvine PTS.

22 Q. I want to look now at the second sentence.
23 Could you read that to the jury, please?

24 A. It says: For example, when a SIP call is
25 signaled, the SIP tracker sees the INVITE and creates

1 the data flows right away.

2 Q. In that context of the SIP example described
3 there, does priming create a data flow right away?

4 A. No, it cannot.

5 Q. Is that statement accurately correct in this
6 document?

7 A. No, this -- this statement is also incorrect.

8 Q. And, again, what kind of document was this?

9 A. I'm not sure what you recall. This is not an
10 official -- like this is not a marketing document of the
11 company.

12 Q. If someone were to rely on this description of
13 priming, would it lead them to the wrong conclusion?

14 A. Yeah, somebody would form the wrong impression
15 if they were to read this document.

16 Q. At a high level, Mr. Bowman, what is priming?

17 A. So priming is an aid or a hint that we have in
18 our signature detection or application ID detection that
19 we talked about earlier. Sometimes there are some
20 possible future connection flows that don't have a good
21 signature on it, and the easiest way to identify them is
22 to create a hint from an earlier connection flow.

23 Q. Now, in that process of priming that you've
24 described, is the priming process aware of any two
25 flows, two connection flows at a time?

1 A. No, the -- the signature engine, the
2 signature, the tracker, they work on a single connection
3 flow. It's the current connection flow. It's not aware
4 that there might be a future one.

5 Q. At the point when a priming entry is created,
6 are there multiple connection flows that are known?

7 A. No, there's a single connection flow known at
8 the time of priming.

9 Q. Does priming have anything to do with a PTS
10 flow record?

11 A. No, the priming has nothing to do with the PTS
12 connection flow record.

13 Q. Is a priming entry created in the PTS flow
14 table?

15 A. No, the priming entries are on a list that's
16 maintained in the PTS Daemon, they're not stored in the
17 connection flow table.

18 Q. Does priming result in linking any two
19 connection flows together?

20 A. No, there's no link between the two flows due
21 to priming.

22 Q. Does priming result in grouping or bundling
23 any two connection flows together?

24 A. No, there's no grouping or bundling of
25 connection flows due to priming.

1 Q. Does priming result in associating any two
2 flows together?

3 A. Likewise, there's no association of any two
4 flows due to the priming in the system.

5 Q. I'm going to give you a statement and ask you
6 if this is correct.

7 When the flow that happens in the future, when
8 it does come, that flow is related to the first flow
9 that created the priming entry. That's the statement.
10 Now, is that a correct statement?

11 A. No, from the standpoint of the PTS, there's no
12 relationship. Each connection flow is atomic. It's
13 independent. So a future flow couldn't be related to a
14 previous flow.

15 Q. Now, we have heard some testimony that
16 Sandvine uses priming to identify Netflix traffic; is
17 that correct?

18 A. No, Sandvine does not use priming to identify
19 Netflix. Netflix is an example of an application that
20 is a very simple signature, each connection flow is
21 independently identifiable.

22 Q. Does Sandvine use priming to identify Facebook
23 traffic?

24 A. No, Facebook is similar to Netflix. It's --
25 it's an example of an application protocol which has a

1 very simple signature that's present on each connection
2 flow at the beginning of it.

3 Q. Today, what percentage of traffic is
4 identified in a PTS product using priming?

5 A. I'm not a hundred percent certain on an exact
6 number. It's going to be very low. It will be much
7 less than 1 percent. Today on the Internet, Facebook,
8 YouTube, Netflix, together these are more than 75
9 percent of the traffic. They don't use connection
10 priming. Very few of the popular protocols do so it
11 wouldn't be very much.

12 Q. Does flow priming track what a user's behavior
13 is?

14 A. No, flow priming exists solely as a hint to --
15 to identify a connection flow. It is not related to
16 tracking user behavior.

17 Q. Does flow priming have anything to do with
18 tracking user behavior?

19 A. No, flow priming is on a connection flow
20 basis. There's no concept of a user or behavior end.

21 MR. BURESH: If you could, pull up
22 Plaintiff's opening Slide 13, please.

23 Q. (By Mr. Buresh) This is a slide, Mr. Bowman,
24 from Plaintiff's opening statement.

25 Do you recognize the document that is

1 underlying this slide?

2 A. Yes, this is a general document that our
3 marketing team produced that talks about traffic
4 classification at many different levels.

5 Q. What is this particular page on the screen in
6 front of you describing?

7 A. This particular document is talking about a
8 feature of a Sandvine product called network analytics
9 that does a feature called video quality analysis or
10 video quality experience. It's trying to determine the
11 delivered quality of Netflix. It's trying to measure
12 for all of the users in some city or region is Netflix
13 good or bad. That's what this is doing.

14 Q. Does the functionality described on this slide
15 have anything to do with the PTS products that are at
16 issue in this case?

17 A. No. This slide is not talking about the PTS.
18 This is talking about something that occurs in a
19 different product. It doesn't run on the same hardware
20 or operating system as the PTS. It runs elsewhere.
21 This is an independent product.

22 Q. Does this slide that we saw in Plaintiff's
23 opening describe the operation of the PTS products that
24 are accused in this case in any way?

25 A. No, this is not related to the PTS.

1 Q. If one were to assume that this document that
2 we're looking at described the PTS, would that lead to a
3 factually incorrect understanding?

4 A. Yes, I think so.

5 Q. Are marketing documents at Sandvine a good
6 place to look for how a particular product works?

7 A. No, I mean, the marketing documents, they
8 simplify some things to make it easier to understand.
9 They are not intended to be a perfectly accurate
10 representation. They're intended to convey general
11 concepts to a -- to an end customer of ours.

12 Q. And just going back to this idea of networks
13 analytics, is that something that requires the PTS
14 products?

15 A. No, the network analytics can run independent
16 of the Sandvine PTS. It can be -- it's a stand-alone
17 product.

18 Q. Separately sold?

19 A. It can be separately sold, yes.

20 Q. Now, the marketing documents at Sandvine, do
21 they often blend Sandvine's different products together?

22 A. Yes, it's a common strategy of ours. We're
23 primarily marketing Sandvine the company and not the
24 products. As you've heard, there's a lot of complexity
25 in our products. We're mainly trying to get people to

1 understand the general functionality they -- they would
2 be enabled if they purchased from us. We're not talking
3 about the specific licenses and individual products in
4 the marketing documents. That's not what the intent is.

5 Q. Within the marketing documents, would it be
6 important to be careful of the context that's being
7 described?

8 A. Yes. Within the marketing documents, there
9 may be a context. It may focus in on a different
10 product area at a time. You'd have to pay attention to
11 that because it wouldn't be specifically called out.

12 MR. BURESH: If we could go to
13 Plaintiff's Opening Slide No. 14, please.

14 Q. (By Mr. Buresh) Now, Mr. Bowman, this is
15 another slide we saw during the Plaintiff's opening.
16 And I want to focus your attention on the upper
17 left-hand slide titled Technical Foundation. Do you see
18 that?

19 A. I do.

20 Q. Now, this idea of associating related flows
21 and sessions that has the red underlining under it, do
22 you see that?

23 A. I do.

24 Q. What is that describing?

25 A. So this is the exact wording from that

1 previous slide. This relates to the network analytics.
2 It's talking about -- for example, if you're watching a
3 two-hour long Netflix movie and another user is watching
4 the same movie, it wants to understand when you hit
5 pause, go get popcorn and come back, that's what it's
6 talking about. It's talking about the network
7 analytics.

8 Q. Does this description, associating related
9 flows and sessions that we're seeing on this slide that
10 was in Plaintiff's opening, have anything to do with the
11 PTS products that are at issue in this case?

12 A. No, this isn't about the PTS at all. It's
13 about the network analytics.

14 Q. Are the network analytics a stand-alone
15 product apart from the PTS?

16 A. Yeah, the network analytics is a product that
17 we independently sell to customers.

18 Q. Also on this slide, we have the Plaintiff
19 highlighted tracking stateful protocols. Do you see
20 that?

21 A. I do.

22 Q. What is tracking stateful protocols?

23 A. So earlier we talked about the concept of the
24 tracker which is a function inside the Sandvine PTS.
25 And what it means by stateful, it means understanding

1 the -- what's called the Layer 4 state, whether you're
2 at the beginning, middle, or end of that connection
3 flow. That's the primary thing that it's talking about
4 there.

5 Q. Does tracking stateful protocols link two
6 connection flows together?

7 A. No. Just like we talked about earlier, the --
8 the tracker may or may not use a concept called priming
9 as a hint, but it still only works on a single
10 connection flow at a time. It doesn't link any two
11 flows.

12 Q. Does it group or bundle any two flows?

13 A. No.

14 Q. Associate two flows?

15 A. It does not.

16 Q. Is this tracker that's being described here
17 even aware of more than one flow at a time?

18 A. No. The way we built the software, the entire
19 system works on a single connection flow at a time.
20 It's not aware of a past flow, and it's not aware of a
21 future flow. It only operates in the present -- on the
22 flow that's present right now.

23 MR. BURESH: If we could expand back out,
24 please, to the -- Plaintiff's Opening Slide 14.

25 Q. (By Mr. Buresh) On the upper right-hand

1 slide, we, again, see this statefully aware signatures;
2 is that correct?

3 A. I see that.

4 Q. And under that we call these trackers. Do you
5 see that?

6 A. I do.

7 Q. Is this the same trackers you were just
8 describing?

9 A. Yes. This is referring inside the Sandvine
10 PTS to that tracker which is part of the signature
11 engine.

12 Q. Now, if someone were to say or even testify
13 that the PTS products are using trackers to tie that
14 mesh around the different grains of rice, would that be
15 an accurate statement?

16 A. No, I don't think that would fit the analogy
17 at all.

18 Q. Do trackers tie or bundle connection flows
19 together in any way?

20 A. No. That's not the intent of the tracker.
21 It's not what we built. The tracker is something that
22 it recognizes a single connection flow. It interacts
23 with that single connection flow. It doesn't understand
24 that there might be more than one future. It doesn't
25 create a tie or a mesh, as you will.

1 Q. Do trackers or priming correlate different
2 flow-entries together?

3 A. No. The tracker is not designed to correlate
4 more than one connection flow together.

5 Q. We heard suggestion that Sandvine uses
6 trackers to identify Netflix. Does Sandvine use
7 trackers to identify Netflix traffic?

8 A. The -- Netflix uses a technique in the system
9 called an analyser. It has a simple signature on each
10 connection flow, and then the analyzer is used to
11 extract additional information. But, no, it does not
12 use a tracker.

13 Q. So in response to the question does Netflix --
14 is Netflix identified by a tracker in the Sandvine
15 products?

16 A. It is not.

17 Q. Does Sandvine use trackers to identify
18 Facebook traffic?

19 A. We do not use a tracker for Facebook.

20 Q. I asked you earlier, Mr. Bowman, about the
21 number of engineers at Sandvine. I believe you said
22 300.

23 A. I believe it was about 325 to 350 at the end
24 of the September of this year.

25 Q. And how many worked on the PTS product?

1 A. Approximately 100 worked on the PTS product.

2 Q. And about how many worked on this flow
3 identification that we're talking about?

4 A. So within the tracker and the connection flow
5 identification, there would have been maybe five or six
6 of those people would have worked in what we call the
7 Fastpath of the system.

8 Q. A few moments ago you mentioned the concept of
9 an analyser. So I'm now going to ask you the same set
10 of questions. Does an analyser in the PTS products
11 link, group, bundle, associate two or more connection
12 flows together?

13 A. No. The analyzer is effectively a newer
14 architecture of the tracker. We used it to replace most
15 of them, but it's actually the same in terms of
16 functionality. The analyzer does not link two
17 connection flows together. That's not what it does.

18 Q. Are analyzers in the PTS products applied to
19 more than one flow -- more than one connection flow at a
20 time?

21 A. They are not.

22 MR. BURESH: Your Honor, I pass the
23 witness.

24 THE COURT: All right.

25 Cross-examination.

1 MR. SKIERMONT: Yes, Your Honor.

2 THE COURT: I gather there are no binders
3 to distribute at this point?

4 MR. SKIERMONT: They are -- I'll check
5 right quick.

6 THE COURT: If there are, let's get that
7 done.

8 MR. SKIERMONT: Will do.

9 MR. HARTSELL: May we approach?

10 THE COURT: You may approach.

11 All right. Mr. Skiermont, you may
12 proceed.

13 MR. SKIERMONT: Thank you, Your Honor.

14 CROSS-EXAMINATION

15 BY MR. SKIERMONT:

16 Q. Good afternoon, Mr. Bowman.

17 A. Good afternoon.

18 Q. You said in your direct that you no longer
19 work for Sandvine; is that correct?

20 A. That's correct.

21 Q. And you're here to testify voluntarily, right?

22 A. That's correct.

23 Q. And during -- since this lawsuit has been
24 filed, you have been participating in this litigation,
25 correct?

1 A. Yes.

2 Q. You were deposed twice, right?

3 A. Two days, yes.

4 Q. And when you were deposed, at least for one of
5 those, you were designated by Sandvine to testify as a
6 corporate representative on behalf of the company,
7 correct?

8 A. Yes.

9 Q. During -- since the time the lawsuit was
10 filed, would you say that it came at an inconvenient
11 time for Sandvine?

12 A. No more so than any other time.

13 Q. During the time you've been working on this
14 litigation, has Sandvine been trying to sell the company
15 or market the company to private equity firms?

16 A. There was a time that we hired a banker as
17 part of our process, yes.

18 Q. And the reason you no longer work at Sandvine
19 is because Sandvine was purchased, correct?

20 A. Yes.

21 Q. And that closed September 21st of this year?

22 A. That's correct.

23 Q. And so the due diligence that was happening on
24 the sale of Sandvine that closed on September 21st
25 happened while this lawsuit was in progress, correct?

1 A. Yes.

2 Q. And Sandvine executives talked to potential
3 acquisition -- or acquirers about this litigation,
4 didn't they?

5 A. I believe so.

6 Q. And when did Sandvine agree in principal to
7 sell the company?

8 A. I don't remember the exact date, but it was in
9 April of 2017 or May. I don't remember the exact date.

10 Q. How much did you make when the company was
11 sold?

12 A. I don't remember the exact amount.

13 Q. Approximately?

14 A. Approximately \$20 million.

15 Q. And how much did Mr. Caputo make?

16 A. It would have been about the same.

17 Q. How much did you invest into Sandvine
18 financially?

19 A. I invested -- we talked about that year of not
20 getting paid. I invested 16 years of my life.

21 Q. How much was the year of not getting paid?

22 A. It would have been my salary at that time.

23 Q. And so your investment of foregoing a salary
24 of one year in addition to the work that you did, of
25 course, for the -- the time that you were working on the

1 products resulted in a return of \$20 million?

2 A. It was 16 years of my life.

3 Q. Were you here for the opening statements?

4 A. I was not.

5 Q. Did you read them?

6 A. No.

7 Q. Were you told what was in them?

8 A. No.

9 Q. Did you review Sandvine's opening statement
10 slides?

11 A. No.

12 Q. Did you participate in creating those slides?

13 A. I don't think so.

14 Q. Did you participate in creating the slides
15 that you presented today?

16 A. Yes, I did.

17 Q. When?

18 A. So earlier on the weekend, I think we worked
19 on those together.

20 Q. Were you in the courtroom for Dr. Almeroth's
21 testimony?

22 A. I was not.

23 Q. So you did not see Dr. Almeroth walk through
24 the Sandvine source code and other Sandvine documents as
25 they compared the claim limitations in this case?

1 A. I did not.

2 Q. You're not an expert in the United States
3 patent laws, are you?

4 A. I'm not.

5 Q. You're not an expert on Packet Intelligence's
6 United States patents, are you?

7 A. Nope.

8 Q. You've never conducted a non-infringement
9 analysis of a United States patent, correct?

10 A. I have not done that, no.

11 Q. You did not compare on direct examination any
12 Sandvine products to any asserted claim in this case,
13 correct?

14 A. No.

15 Q. You've never spoken to Dr. Nettles, have you?

16 A. I have spoken to Dr. Nettles.

17 Q. Have you spoken to Dr. Nettles since July of
18 this year or before July of this year?

19 A. No.

20 Q. And who is Dr. Nettles?

21 A. Dr. Nettles is an expert that Sandvine has
22 called.

23 Q. And we'll hear from him later today?

24 A. I believe so.

25 Q. What's the first time you spoke to him?

1 A. The first time I spoke to him was on a
2 conference call last week where he listened to some of
3 the things that I planned to say but didn't say
4 anything.

5 And then the second time was on this weekend
6 when I met him for the first time.

7 Q. So you had never spoken to Dr. Nettles before
8 Dr. Nettles formulated his opinions about infringement
9 in this case, correct?

10 A. That's correct.

11 Q. Dr. Nettles has never heard you say the things
12 you said in Court today, correct?

13 A. I don't know whether he's here or not. I
14 don't know what he's heard, but I did not speak to him
15 prior to those dates.

16 Q. To the extent you have any understanding of
17 Packet Intelligence's claims in this case, that comes
18 from Sandvine's lawyers, right?

19 A. It comes from a layperson reading of the
20 claims, and it comes from discussion with Sandvine's
21 lawyers, yes.

22 MR. SKIERMONT: And if you would put up
23 Sandvine's opening Slide 15, please?

24 Q. (By Mr. Skiermont) And based on your layman's
25 understanding and conversations with Sandvine counsel,

1 is it your understanding, Mr. Bowman, that the
2 difference between what is claimed in the patents in
3 this case and the PTS products is fairly depicted on
4 Slide 15?

5 A. Yes, my understanding is that the difference
6 comes down to the concept of a conversational flow on
7 the left and our implementation of the connection flow
8 on the right.

9 MR. SKIERMONT: Move to strike everything
10 after "yes."

11 THE COURT: Sustained.

12 Mr. Bowman, you need to limit your
13 answers to the questioned ask. Counsel for Sandvine
14 will get a chance to ask you further questions later.

15 THE WITNESS: I'm sorry, Your Honor.

16 THE COURT: That's all right.

17 Let's continue.

18 MR. SKIERMONT: Will you please put up
19 Mr. Bowman's Slide 5.

20 Q. (By Mr. Skiermont) This was one of the
21 demonstrative exhibits you used during your direct,
22 correct?

23 A. Yes.

24 Q. And all of these -- these six slides that look
25 like PowerPoint slides that were in your direct, these

1 are things you created for your testimony today,
2 correct?

3 A. Yes.

4 Q. None of these documents of these slides cite
5 any document, correct?

6 A. I don't believe they do.

7 Q. Slide 5 from your direct show -- depicts
8 something that you've labeled a flow table, correct?

9 A. Yes.

10 Q. That is not the complete set of fields for
11 each flow in the PTS flow table, is it?

12 A. That's correct.

13 Q. There are many, many, many more fields in the
14 PTS flow table than are depicted in Slide 5, correct?

15 A. There are more fields than are shown here.

16 Q. And what this flow table on your Slide 5 also
17 doesn't show are any field extensions in the flow table,
18 correct?

19 A. That's correct.

20 Q. Do the Sandvine products use information from
21 the flow records to create statistics that combine
22 information from multiple flow records?

23 A. Yes.

24 Q. I think you testified on direct that a
25 document -- a Sandvine document that is identified as

1 Plaintiff's Exhibit 381 was inaccurate; is that right?

2 A. Yes, I believe so. I don't remember the -- if
3 that's the exact document.

4 Q. You have your direct binder up there with you?

5 A. I do.

6 MR. SKIERMONT: And if you could put up
7 PTX-33 -- no, I'm sorry, DTX-219.

8 A. Okay. I have it in front of me.

9 Q. (By Mr. Skiermont) Okay. And it's also on
10 your screen. Please feel free to look at whatever one
11 is more convenient.

12 DTX-219 is the email you testified about that
13 had the attachment that has a document that was entitled
14 Application Traffic Analysis that you said was wrong on
15 direct, correct?

16 A. That's right.

17 Q. You were copied on the email in DX-219 that
18 attached the Application Traffic Analysis document,
19 weren't you?

20 A. I am.

21 Q. And did you write back and made sure Mr.
22 O'Halloran knew that was wrong?

23 A. I don't remember.

24 Q. You don't know one way or the other?

25 A. This was 10 years ago.

1 Q. You might have just let a document that
2 described priming inaccurately go unremarked?

3 A. I don't even know if I opened the document at
4 that time, to be honest, sir.

5 Q. Did you identify the section of the document
6 and its error in connection with your work on this
7 litigation?

8 A. Yes.

9 Q. I think you also said on direct that -- well,
10 actually, I have a -- just a question about your
11 testimony on Plaintiff's PTX-344.

12 MR. SKIERMONT: If you'd put that one up.
13 And if you'd go to Slide 3 -- no, I'm sorry.

14 Q. (By Mr. Skiermont) Is this the document, Mr.
15 Bowman, that you testified on direct was about network
16 analytics?

17 A. No, I can't agree with that.

18 Q. Okay. Is PTX -- you have PTX-344 in your
19 binder?

20 A. I do.

21 Q. And what is PTX-344?

22 A. PTX-344 is a document about the general
23 concepts of Internet traffic classification spanning all
24 of our products.

25 Q. PTX-344 appears to be a training document that

1 Sandvine would use for internal sales training, right?

2 A. I don't believe it's actually internal. I do
3 believe that we used this document externally.

4 Q. You use this document primarily for internal
5 sales training, don't you?

6 A. I -- I don't believe that's correct.

7 MR. SKIERMONT: Ms. Vogtman, can you call
8 up -- or not -- don't show it yet, but it's on 143, Line
9 25, to 144, Line 7.

10 Q. (By Mr. Skiermont) Mr. Bowman, we mentioned
11 or we discussed earlier that you were deposed for two
12 days in this case in May of this year; is that right?

13 A. Yes.

14 Q. Do you remember that?

15 A. Yes.

16 Q. And you were under oath when you were -- when
17 you were being deposed in that --

18 A. I was.

19 THE COURT: Let's wait for the question
20 and then answer, and then wait for the answer, and then
21 ask the next question.

22 MR. SKIERMONT: Yes, Your Honor.

23 THE COURT: Let's continue.

24 MR. SKIERMONT: It's from the 7 -- May
25 17th volume, Volume 1, Page 143, Line 25. Can you put

1 them both on? Thank you.

2 Q. (By Mr. Skiermont) Mr. Bowman, at your
3 deposition, you were asked a question: And what is the
4 nature of this sort of document -- - which is in
5 reference to PTX-344.

6 And you answered: This document appears to be
7 one we would use for internal sales training primarily.
8 So we would be educating people on the value proposition
9 differentiators, how to explain to our customers the
10 types of things that they should look for to solve their
11 problems.

12 Were you asked that question, and did you give
13 that answer under oath?

14 A. I did.

15 MR. SKIERMONT: If you would pull up
16 Sandvine 0006624, please, Ms. Vogtman. And to the slide
17 on the PTS 8210.

18 Q. (By Mr. Skiermont) Mr. Bowman, this is a PTS
19 8210 Technical Highlight slide. Do you see that?

20 A. I do.

21 Q. And is the PTS 8210 the first version of the
22 PTS that you testified about that was under development
23 in the 2002, 2003 time frame?

24 A. Yes.

25 Q. And can you read for the jury, please, what

1 the PTS 8210 inspection throughput was?

2 A. So we list the inspection throughput as one
3 gigabit per second. That's one billion bits per second.

4 MR. SKIERMONT: Okay. You can take that
5 down. Thank you.

6 And if you can bring up Almeroth's Slide
7 28.

8 Q. (By Mr. Skiermont) Mr. Bowman, do you
9 understand what PTS products are accused of infringement
10 in this lawsuit?

11 A. I believe so.

12 Q. And that would include the 14000 series, the
13 22000 series, the 24000 series, the 32000 series, and
14 the Virtual Series, correct?

15 A. Yes.

16 Q. And the first one of those accused -- and
17 those are on your screen there. The first -- the 14000
18 was the earliest, right?

19 A. Of this list, the 14000 is the oldest, yes.

20 Q. And you began selling the -- so the 14000 is
21 the earliest product that is accused of infringement in
22 this case, correct?

23 A. Yes.

24 Q. And when was the first 14000 series product
25 released?

1 A. I don't remember the exact date, but it would
2 have been 2006. It might have been late 2005. I don't
3 recall exactly.

4 MR. SKIERMONT: Would you call up
5 PTX-138, please?

6 Q. (By Mr. Skiermont) I've called up PTX-138.

7 MR. SKIERMONT: If you can blow up right
8 under Chicago that has the date. Yeah, keep going.
9 There you go.

10 Q. (By Mr. Skiermont) So this is a -- an article
11 that is announcing the release of the PTS 14000 series
12 in June -- on June 5, 2006. Does that refresh your
13 recollection as to when Sandvine released the PTS 14 --
14 the first PTS 14000 series?

15 A. That seems reasonable to me.

16 MR. SKIERMONT: If you could put up
17 Sandvine's opening timeline.

18 Q. (By Mr. Skiermont) Do you see, Mr. Bowman, on
19 Sandvine's opening timeline where Mr. Gillam said that
20 February 2003 was the first PTS device released, and
21 then was indicating that that came before any of the
22 patents in this case issued. Do you see that?

23 A. I do.

24 Q. And if we were going to add a -- an entry on
25 this timeline for the release of the first product

1 accused of infringement in this case, that would -- that
2 line would drop in mid-2006 after the issuance of all
3 three patents in this lawsuit, correct?

4 A. Yes.

5 MR. SKIERMONT: If you could pull up
6 PTX-283, please.

7 Q. (By Mr. Skiermont) I believe PTX-283 is also
8 in your binder, Mr. Bowman, just for reference.
9 PTX-283 is United States Patent No. 7,277,963. Do you
10 see that?

11 A. I do.

12 Q. And I believe you mentioned on direct that you
13 knew one of the inventors -- knew well one of the
14 inventors, Mr. Dolson?

15 A. Yes.

16 Q. And were you aware, Mr. Bowman, that the Dietz
17 '725 patent that is at issue in this case is cited in
18 the references cited section of Sandvine's '963 patent?

19 A. I was not.

20 Q. You were not aware?

21 A. I was not at that time.

22 Q. My question is about today.

23 A. I am aware today.

24 Q. And this patent issued on October 2nd, 2007?

25 A. That's correct.

1 Q. And so would you agree with me, Mr. Bowman,
2 that Sandvine was aware of the Dietz '725 patent since
3 at least October 2, 2007?

4 A. No.

5 Q. And why is that?

6 A. The -- the patent was cited by the examiner.
7 You can see the star in the column there. And so -- it
8 was not something that we were aware of.

9 Q. What did you do to determine whether -- and if
10 you could -- I'm sorry to interrupt myself.

11 MR. SKIERMONT: Ms. Vogtman, if you
12 could show the references cited portion where it cites
13 the '725 patent with the asterisk and blow it up --
14 asterisk. It is the -- it's the last cite on the cover
15 page on the first -- on the left-hand column, if you
16 could call it out.

17 Q. (By Mr. Skiermont) I apologize, Mr. Bowman.
18 We're having a little technical difficulty.

19 You can see the -- the citation on the one
20 in -- just maybe we can --

21 A. I can flip to the binder if you'd prefer.

22 Q. I think it looks like we're back up, just in
23 the nick of time.

24 You see there it says 6,665,725 in the
25 references cited section of the cover page of Sandvine's

1 patent, and it has an asterisk next to it which is, as
2 you've indicated, means it was cited by the U.S. patent
3 examiner when Sandvine applied for the patent, correct?

4 A. That's correct.

5 Q. And that means that when Sandvine submitted
6 this application on January 26th, 2002, the examiner
7 went looking for things that seemed kind of like this
8 patent application of Sandvine, correct?

9 A. I don't know what the examiner did. The
10 examiner cited it.

11 Q. And the examiner cited it because he thought
12 it was related to the application that the examiner was
13 examining when he or she received it, right?

14 A. You would have to ask the examiner.

15 Q. You don't have an understanding one way or the
16 other, Mr. Bowman, of what it means when an examiner
17 cites a patent during a patent application process?

18 A. My understanding --

19 MR. BURESH: Objection, Your Honor,
20 foundation.

21 THE COURT: He's asking him if he
22 understands. I'll overrule the objection.

23 Restate the question.

24 Q. (By Mr. Skiermont) Do you have an
25 understanding of what it means for a United States

1 patent examiner to cite a prior art patent in the
2 references cited section of an application that issues
3 as a patent?

4 A. I believe this means this is one of the
5 documents the patent examiner looked at during the
6 prosecution phase of the patent.

7 Q. And how did the doc -- and how did --
8 withdrawn.

9 Do You know how the examiner managed to find
10 this Dietz patent out of all the patents in the world
11 when examining this particular application?

12 A. I have no idea.

13 Q. You don't -- okay. Do you agree, Mr. Bowman,
14 that when Cisco was selling its SCE family of products,
15 that those products directly competed with the Sandvine
16 PTS products?

17 A. Some components of it competed with Sandvine.

18 MR. SKIERMONT: If you could pull up,
19 please, Sandvine 18117009. It's the Mr. Bowman email,
20 subject to responses, RTP clarifications.

21 MR. BURESH: Your Honor, this isn't --
22 it's not in the witness's binder. Could I get a
23 clarification of what this is?

24 MR. SKIERMONT: It should be.

25 Yes, you can. I thought it was in the

1 binder.

2 Your Honor, I will move on and -- and --
3 I'll move on. If it's not in the binder, I'll just move
4 on.

5 THE COURT: All right. Let's -- let's go
6 forward.

7 MR. SKIERMONT: Yeah, all right -- yes,
8 Your Honor, will do.

9 Q. (By Mr. Skiermont) Mr. Bowman, do you recall
10 looking at some slides from the Plaintiff's opening that
11 were highlighted? There were three on one slide, and --
12 and your counsel walked you through those?

13 A. I do.

14 Q. And you said that those slides -- you were
15 asked whether those slides had anything to do with the
16 PTS products, correct?

17 A. That was one of the questions, yes.

18 Q. And I believe your testimony was that those
19 slides related to network analytics; is that right?

20 A. No, that was not my entire testimony.

21 Q. Did those slides relate to network analytics?

22 A. Some of them did.

23 Q. Which -- which ones?

24 A. They were line-by-line.

25 Q. Do you have your direct binder that has that

1 slide in it?

2 A. I do.

3 Q. And is that -- and it's --

4 MR. SKIERMONT: Will you call up opening
5 statements to Slide --

6 Q. (By Mr. Skiermont) Is it 13 or 14, Mr.
7 Bowman?

8 A. I'm sorry, I don't know which -- which exhibit
9 that is.

10 Q. In your exhibit binder, that slide from your
11 opening?

12 A. Yeah, there's two -- two binders, and which --
13 which document?

14 Q. Oh, from your direct.

15 A. There are two binders, and which -- which --

16 MR. SKIERMONT: Packet Intelligence's
17 opening statements slide, I think it's 13 or 14.

18 I'll call it out so --

19 A. I'm sorry, can you give me a number, please,
20 so that I can make sure that I'm on the same one you
21 are?

22 Q. (By Mr. Skiermont) Yes, I will.

23 MR. SKIERMONT: All right. I think it
24 should be 13 or 14.

25 Keep going.

1 There we go.

2 Next one.

3 Next one. Okay.

4 Q. (By Mr. Skiermont) Which of the -- so it's
5 Slides 15 and 16 from the opening statement that you
6 testified on direct about. My question is which one of
7 these, is it your testimony, is about network analytics?

8 A. The components on the previous slide that
9 talked about the -- the asset ID that was for the video
10 quality experience, the component that says associating
11 related flows and sessions, that's the same wording as
12 that slide, it's referring to the network analytics.
13 The component's talking about tracking stateful
14 protocols, that relates to the PTS, as does the state
15 fully aware signature tracker and analyzer component, so
16 it's a mix.

17 Q. I'm sorry, what was the last thing you said?

18 A. I said the signature tracker and analyzer
19 component refers to the PTS.

20 Q. The signature tracker and analyzer component
21 refers to the PTS products at issue in this case, right?

22 A. That's correct.

23 MR. SKIERMONT: If you could turn back to
24 Slide 15, Ms. Vogtman.

25 Q. (By Mr. Skiermont) And it's this slide's

1 associating flows that you said was related to network
2 analytics, is that -- do I have that right?

3 A. Yes.

4 Q. The slide describes -- this slide describes an
5 analysis that is based on -- that is based on
6 information from a PTS, correct?

7 A. That's one of the sources, yes.

8 Q. Do network analytics' products use information
9 from the PTS products?

10 A. They can.

11 Q. Mr. Bowman, do you think there was anything --
12 I think you identified the PTX-381, you said that that
13 described priming inaccurately. Were there any other
14 trial exhibits, Mr. Bowman, that you concluded that
15 Sandvine produced that are pre-admitted trial exhibits
16 in this case that are wrong?

17 A. I don't know if I know all of the trial
18 exhibits in this case, so I'm not sure I can answer
19 that.

20 Q. Do you know any other of -- any of the
21 other -- do you know if there are any other pre-admitted
22 trial exhibits that are wrong other than PTX-381,
23 according to you?

24 A. There are many that are imprecise, but I'm not
25 sure if I know of any others that are flat-out incorrect

1 like that one was.

2 Q. I don't have anything else. Thank you.

3 MR. SKIERMONT: Pass the witness.

4 THE COURT: Redirect?

5 MR. BURESH: Yes, Your Honor.

6 Could we pull up PTX-344, please?

7 REDIRECT EXAMINATION

8 BY MR. BURESH:

9 Q. During cross, you were asked about this
10 document. Do you see that?

11 A. I do.

12 Q. And I believe you were shown some deposition
13 testimony?

14 A. I was.

15 Q. Can you just explain the purpose of this
16 document at Sandvine?

17 A. The primary purpose is internal training;
18 however, we do use it externally, as well.

19 MR. BURESH: Could you turn to Page 18 of
20 this document?

21 Q. (By Mr. Buresh) Now, is this the same
22 document you were just seen -- just shown from the
23 Plaintiff's opening slides?

24 A. I believe so.

25 Q. Is this entire page here describing network

1 analytics?

2 A. Yes, this entire page is around the video
3 quality of experience feature of our network analytics
4 product.

5 Q. And does network analytics run on the PTS?

6 A. No, it does not.

7 Q. Can it operate without any data from the PTS?

8 A. Yes, it can.

9 MR. BURESH: If we could pull up PTX-283
10 for a moment.

11 Scroll up just a little bit, please.

12 Thank you.

13 Q. (By Mr. Buresh) I believe it was emphasized,
14 the Dietz patent, down here at the very bottom, do you
15 see that?

16 A. I do.

17 Q. And -- and just so we're clear, how did that
18 come to get on this document?

19 A. You can see from the star that it was cited by
20 the examiner. So you see that we only cited one, which
21 was Packer, and the others with the star are all cited
22 by the examiner.

23 Q. Now, this patent --

24 MR. BURESH: If we could expand back out,
25 please.

1 Q. (By Mr. Buresh) This is the U.S. Patent No.
2 7,277,963; is that correct?

3 A. That's correct.

4 Q. And that's one of the many patents we've heard
5 about that were issued to Sandvine?

6 A. Yes.

7 Q. And this patent was issued over or despite the
8 fact that this Dietz patent was found by the examiner
9 and placed on your patents; is that correct?

10 MR. SKIERMONT: Objection, foundation.

11 MR. BURESH: The foundation is right in
12 front of him, Your Honor.

13 THE COURT: I'll overrule the objection.
14 You may answer the question, Mr. Bowman.

15 Q. (By Mr. Buresh) This Sandvine patent, the
16 '963 patent, issued over or despite the fact that the
17 examiner was aware of the Dietz patent and put this on
18 your -- your patent; is that correct?

19 A. That is correct.

20 Q. What does that tell you?

21 A. My conclusion would be that the examiner
22 didn't feel that that patent was prior art to this or
23 invalidate it.

24 Q. Mr. Bowman, Mr. Skiermont asked you about the
25 amount of money you received from the acquisition of

1 Sandvine. Do you recall that?

2 A. I do.

3 Q. Why don't you tell the jury what type of
4 investment you made to secure that outcome?

5 A. So Sandvine has been a lot of work for me, for
6 my friends, and we've -- we've worked our butts off
7 every day since that date in 2001. You know, I've
8 traveled the world, I've seen lots of customers, I've
9 been through a lot. I've been robbed at gunpoint. I've
10 been mugged. I mean, I've had a lot in this.

11 THE COURT: Mr. Bowman --

12 THE WITNESS: I'm sorry.

13 THE COURT: -- I'm happy for you to
14 answer the question in any fashion that you think is
15 accurate, but do so without referring to human anatomy,
16 all right?

17 THE WITNESS: I'm sorry, Your Honor.

18 THE COURT: Let's go forward.

19 A. I -- myself, my colleagues, we have worked
20 very, very hard to get Sandvine to the point it's at
21 today. That was the capital that I put into that
22 company.

23 Q. (By Mr. Buresh) Thank you, Mr. Bowman.

24 MR. BURESH: And nothing further, Your
25 Honor.

1 THE COURT: You pass the witness?

2 MR. BURESH: Yes.

3 THE COURT: Additional cross?

4 MR. SKIERMONT: No, Your Honor.

5 THE COURT: You may step down, Mr.

6 Bowman.

7 MR. BURESH: Your Honor, may Mr. Bowman
8 be excused?

9 THE COURT: Is there objection?

10 MR. SKIERMONT: No objection.

11 THE COURT: Mr. Bowman, you're excused.

12 You're free to stay. You're also free to leave, sir.

13 Defendants, call your next witness.

14 MR. BURESH: Your Honor, Sandvine calls
15 Dr. Nettles.

16 THE COURT: All right.

17 MR. BURESH: I'm sorry, Your Honor. I
18 misspoke. We intend to play the videos from the
19 depositions now, if that's acceptable to Your Honor.

20 THE COURT: We'll do it in whatever you
21 want to do it --

22 MR. BURESH: Thank you, Your Honor.

23 THE COURT: -- Mr. Buresh.

24 You're calling witnesses by depositions.

25 Do you want to introduce those, then? Tell me who

1 you're calling by deposition and who they are, and then
2 we'll proceed with that deposition.

3 MR. BURESH: Yes, Your Honor.

4 By deposition, we are calling Michael
5 Ham, a representative of Exar Corporation. Deposition
6 taken on 3/30/217 (sic), and we have a total of 6
7 minutes and 7 seconds of testimony.

8 THE COURT: I assume you mean 2017.

9 MR. BURESH: What did I say?

10 THE COURT: 217.

11 MR. BURESH: 2017, Your Honor. Thank
12 you.

13 THE COURT: All right. Let's proceed.
14 (Videoclip played.)

15 QUESTION: Mr. Ham, could you state your
16 full name and your title -- current title for the
17 record?

18 ANSWER: My name is Michael Ray Ham. I'm
19 director of applications engineering for the data
20 compression and security products at Exar Corporation.

21 QUESTION: And how long have you worked
22 for Exar?

23 ANSWER: Since 1999, through
24 acquisitions.

25 QUESTION: And so what do you mean by

1 through acquisitions?

2 ANSWER: I -- I have seniority based on
3 my time since the time that I worked at Apptitude. I've
4 worked physically with Exar -- for Exar since 2009,
5 since the acquisition of Hi/Fn Corporation.

6 QUESTION: So you started working for
7 Apptitude in 1999?

8 ANSWER: Yes, I did.

9 QUESTION: And then Apptitude was
10 eventually acquired by Hi/Fn; is that right?

11 ANSWER: That's correct.

12 QUESTION: And you stayed on with Hi/Fn?

13 ANSWER: I did.

14 QUESTION: And then Hi/Fn was acquired by
15 Exar Corporation; is that right?

16 ANSWER: That's correct.

17 QUESTION: Do you understand that -- I
18 guess, what is your understanding as to the capacity in
19 which you're testifying today?

20 ANSWER: I'm basically to answer your
21 questions to the best of my ability to represent Exar
22 Corporation as a whole.

23 QUESTION: So your answers will be on
24 behalf of Exar Corporation, the corporation, correct?

25 ANSWER: Correct.

1 QUESTION: So who would -- who would have
2 been in charge of, I guess, the MeterFlow code when Exar
3 acquired Hi/Fn -- acquired Hi/Fn?

4 ANSWER: I would assume that it was owned
5 by the software engineering group. But at the time of
6 the acquisition, the product had already been
7 basically -- I'm not sure exactly what the term is, but
8 it was no longer supported, and it was no longer active
9 for sale. We were no longer marketing the product, and
10 we were no longer supporting the product is -- is my
11 understanding.

12 QUESTION: So you're saying the Hi/Fn was
13 no longer supporting the product when Exar acquired
14 Hi/Fn?

15 ANSWER: That's my understanding, yes.

16 QUESTION: Okay. And just when you said
17 acquisition, I just want to make sure I understand which
18 acquisition you're referring to.

19 ANSWER: Yes. The -- the acquisition of
20 Hi/Fn to Exar.

21 QUESTION: So when Hi/Fn acquired -- or
22 Exar acquired Hi/Fn, MeterFlow was -- was -- was it no
23 longer being sold by Hi/Fn?

24 ANSWER: That's my understanding, yes. I
25 believe it was in one of the documents.

1 QUESTION: Do you -- do you know why it
2 was no longer being sold?

3 ANSWER: I would assume that there wasn't
4 enough sales. It was no longer a focus of -- of Hi/Fn.
5 Hi/Fn's business was focused around compression in
6 security chips and offering software to facilitate sales
7 of security in compression chips.

8 QUESTION: And Exar never actively
9 marketed or sold MeterFlow since 2009; is that right?

10 ANSWER: That's my understanding, yes.
11 We had -- I believe there were a couple of customers
12 that already were using it that came back and asked for
13 either extended licenses or maybe a new license to use
14 it in a new product, but it was a strictly
15 opportunistic -- you know, we -- it was -- it was
16 never -- there was never any support offered.

17 QUESTION: And then the third paragraph
18 down, it says: Based upon Hi/Fn's technology licensing
19 agreements as -- as of the valuation date, discussions
20 with management, and industry experience, we estimated
21 that 2.0 percent represented a reasonable royalty that a
22 user would pay for the patents/core technology of Hi/Fn.

23 Did I read that correctly?

24 ANSWER: Yes.

25 QUESTION: And do you understand that

1 Duff & Phelps was using a 2 percent -- or is
2 representing that a 2 percent royalty rate is
3 reasonable?

4 ANSWER: I believe that's what it says.
5 That's for the patents.

6 QUESTION: Okay. And those were products
7 that were no longer being supported by Exar?

8 ANSWER: Correct.

9 QUESTION: Correct? And was Exar making
10 any continued efforts to sell those MeterFlow products
11 or MeterWorks products?

12 ANSWER: I don't -- I'm not aware of any
13 effort at any time to try to sell either of these
14 products post-acquisition of Hi/Fn.

15 QUESTION: And I think you also testified
16 that Hi/Fn had essentially given up on these products,
17 as well; is that right?

18 ANSWER: My understanding was that we
19 were no longer marketing or making any effort to sell
20 these products as Hi/Fn either, correct.

21 QUESTION: And it was your understanding,
22 based on this document, that the -- the valuation of 1.5
23 million was given to all 43 patents acquired by Exar in
24 its acquisition of Hi/Fn; is that right?

25 ANSWER: I believe that's correct.

1 QUESTION: And it's also your
2 understanding that 26 of those 43 patents were
3 ultimately sold by Exar to patent -- or to Packet
4 Intelligence; is that correct?

5 ANSWER: 26? Yes, I believe that is the
6 number.

7 QUESTION: Is it your understanding then
8 that Exar's already received \$875,000 for 26 of -- of
9 the patents that have sold to Packet Intelligence?

10 ANSWER: That's my understanding. The
11 500 plus the contingent monies, too.

12 (Videoclip ends.)

13 THE COURT: Does that complete this
14 witness by deposition?

15 MR. BURESH: It does, Your Honor.

16 THE COURT: Call your next witness.

17 MR. BURESH: Your Honor, Sandvine calls
18 next by deposition Joseph Maixner. His deposition was
19 taken on April 7th of 2017, and he is an inventor on the
20 accused patents.

21 THE COURT: Proceed with this witness by
22 deposition.

23 (Videoclip played.)

24 QUESTION: Good morning. Would you
25 please state your full name for the record?

1 ANSWER: Yes, my name is Joseph Maixner.

2 QUESTION: Okay. And, Mr. Maixner, where
3 do you reside?

4 ANSWER: I live in Aptos, California.

5 QUESTION: Mr. Maixner, you have been
6 handed Exhibit 2.

7 ANSWER: Uh-huh.

8 QUESTION: Do you recognize this document
9 as the patent that you reviewed in preparation for
10 testifying today?

11 ANSWER: Yes, I do.

12 QUESTION: Okay. And for the record,
13 this is U.S. Patent 6,954,789, correct?

14 ANSWER: That's correct.

15 QUESTION: And you are a named inventor
16 on this patent, as well?

17 ANSWER: Yes, I am.

18 QUESTION: The '789 patent in preparation
19 for testifying today?

20 ANSWER: So I reviewed the various block
21 diagrams, they looked familiar from the many years past.
22 Well, I went through the -- I reviewed the abstract,
23 looked through the block diagrams, reviewed the -- all
24 the contents up through -- all the contents up through
25 brief -- yeah, up through detailed -- de -- detailed

1 description of preferred embodiments. Okay.

2 QUESTION: In Column 8?

3 ANSWER: And -- yes. Up through --

4 QUESTION: Okay.

5 ANSWER: Up through the end of Column 8.

6 And then -- then I reviewed -- find them -- and then I

7 reviewed all the claims, basically.

8 QUESTION: With respect to Exhibit 3, was
9 this also a patent that you reviewed in preparation for
10 testifying today?

11 ANSWER: Yes, it is.

12 QUESTION: Okay. And for the record,
13 this is U.S. patent 6,839,751, correct?

14 ANSWER: That is correct.

15 QUESTION: And you are named as an
16 inventor on this patent, as well?

17 ANSWER: I believe so.

18 QUESTION: Are you familiar with Russell
19 Dietz?

20 ANSWER: Oh, yes, of course.

21 QUESTION: Does -- was he part of the
22 development of the software side or software
23 implementation of MeterFlow in that 1997, '98?

24 ANSWER: No, no, we never let him touch
25 code.

1 QUESTION: Okay.

2 ANSWER: To be honest.

3 QUESTION: What was Mr. Dietz's role, if
4 any?

5 ANSWER: Russ was CTO. He's more of a
6 technologist.

7 QUESTION: Okay. So as CTO or more of a
8 technologist, did he play a role in the MeterFlow
9 software in that 1997, 1998 time frame?

10 ANSWER: Well, certainly as -- as a chief
11 technologist of the company, you know, he -- you know,
12 all of the core technology that was -- that was
13 developed would have been developed with his review and
14 his approval. Certainly, there would always be
15 technical discussions, and, hey, what do you think about
16 this idea, how should we do that, you know, and, you
17 know, and -- and, you know, and various technical
18 reviews and discussions. So, yeah, he would have been
19 familiar certainly from that point of view.

20 QUESTION: Okay. From a coding
21 standpoint, that's the best of your recollection, it was
22 primarily you, right?

23 ANSWER: Especially in those early years,
24 yes.

25 QUESTION: Let's kind of start at the

1 beginning.

2 What -- when we refer to MeterFlow
3 functionality, what do you understand that to mean to
4 you?

5 ANSWER: MeterFlow, to me -- to me, I
6 kind of view MeterFlow internally. Does that make
7 sense? I -- to be honest, since I basically implemented
8 it from the ground up and was the original author and --
9 you know, and implementer for it, I kind of -- I still
10 kind of view it as all the stuff it does, right. It
11 goes through the process of parse -- of decoding packets
12 and parsing the -- at the various layers. It then goes
13 through some of the things that you'd even see in the --
14 in the patents.

15 You know, then it goes through a look-up
16 process, what they call a flow look-up. And this
17 involves from the parsing and decoding, extracting
18 information into what's referred to as a key or a flow
19 key, and then looking that up -- up what they call a
20 flow-entry, and then -- in other words, a common single
21 object for a given network flow, which is something that
22 is one instance of a communications connection or a -- a
23 set of exchanges -- common exchanges between two end
24 points, and that gets us up to creating single flows.
25 And that's the beginning of MeterFlow.

1 Actually, the beginning is actually the
2 -- the very -- decoding the first layer, decoding the
3 second layer, decoding the third, and then figuring out
4 how to parse them all together, and then start trying to
5 get your basic flow-entries, which, you know, would
6 involve the TCP and UDP protocols, and then beyond that
7 gets into application layer.

8 QUESTION: Okay. Would you consider
9 MeterFlow a commercial success?

10 ANSWER: Well, from an Apptitude point of
11 view, it -- MeterFlow -- both the hardware and the
12 software, hardware meaning hardware, you know, designs,
13 hopes, dreams, so forth, and MeterFlow software were the
14 principal thing that got Hi/Fn to purchase Apptitude.
15 So in that sense, for the Apptitude investors, that was
16 the -- that was a bonus.

17 Beyond that, App -- you know, Hi/Fn had
18 no ability to sell the software and -- or finish the
19 chip and bring it to market. So as a commercial
20 success, I would say no.

21 QUESTION: In -- in the context --
22 context of what you've just described, you used the term
23 "flow." What do you mean by that?

24 ANSWER: Well, a flow is normally a
25 communication -- some communication between two end

1 points.

2 QUESTION: Is that the same thing as a
3 connection flow?

4 ANSWER: Yeah, well, a connection flow
5 would be a -- something that involves a connection, all
6 right, so not all protocols at -- and this is a Layer 4
7 thing, and not all protocols involve connections. So
8 TCP would involve a connection. UDP, there's no real
9 connection, so there's just an exchange between two end
10 points.

11 And other lower layer protocols at the --
12 you know, it -- from Layer 2 through 3, similarly, you
13 know, don't have connections.

14 QUESTION: And -- and how is that term,
15 as you use it, different from the term "conversational
16 flow"?

17 ANSWER: Well, I think conversational
18 flow involves multiple -- involves a higher level
19 context. So higher -- a conversational flow would be
20 a -- an abstraction of a flow that involves multiple
21 sub-flows, not sub-flows, but say -- we could say that a
22 conversation flow would involve multiple flows itself,
23 right, and those flows would be kind of related as a
24 common object.

25 QUESTION: Does any of the subject matter

1 of -- of the accomplishments in this email relate to the
2 three patents on which you are a named inventor?

3 ANSWER: Some -- some do, certainly.
4 Like the H323 engine, that is apparently done by April
5 2000. That's also one of the ones that was mentioned in
6 the Packeteer stuff that we had discussed, right?

7 5.5, here's a version number, which is a
8 reorganization of the code for that, so the SAP R/3
9 engine is another stateful engine that does port hopping
10 and all that sort of stuff.

11 Defined MeterFlow performance metrics,
12 the -- the -- this would have been the definition in the
13 content of which would have gone into the -- one of the
14 patents.

15 Let's see which one that is.

16 The Exhibit No. 3 patents, as a matter of
17 fact, if we -- if -- yeah, as a matter of fact, if
18 this -- this -- this define MeterFlow performance
19 metrics item would have been the genesis of the content
20 that went into this patent starting on Column 32 in
21 terms -- you know, in terms of all the various metrics
22 that were described.

23 QUESTION: Oh, okay.

24 ANSWER: And let's see --

25 QUESTION: Go on.

1 ANSWER: There's -- let's see, the rest
2 of the documentation was done. That's not important.

3 QUESTION: Before you turn away from the
4 first page, the -- the bullet -- the main bullet point,
5 second one -- second up from the bottom says MeterWorks
6 and MeterFlow SDKs Version 5.5 release.

7 ANSWER: Oh, yeah, yeah, right, right.

8 QUESTION: And what does that signify?

9 ANSWER: If you look at, you know, some
10 of the re -- oh, the -- if you look at the second bullet
11 from the top, it talks about a code reorganization. And
12 what this -- what this fifth bullet up from the bottom,
13 develop SDK generation tools and infrastructure, and
14 then second one from the bottom is kind of all part of
15 the same thing. That was actually the first splitting
16 of MeterFlow into its own separate independent SDK.
17 Before that, it would have always been part of the
18 MeterWorks coding infrastructure. That was Version 5.5,
19 right?

20 Okay. More product documents got
21 written. Yeah, this is -- for Michelle, also to follow
22 up on one of your early -- earlier questions, as -- this
23 is -- this is the catch-up. If you see, there's a lot
24 of documents that are getting done here. This is the
25 catch-up from having done all so much coding and not

1 having done a lot of design documents along the way.

2 This would be the first time I got some
3 good docs done. Re-work this, re-worked that. I'm
4 looking on Page 744. Developed a new configuration
5 front-end -- shepherd migration of agents, okay. More
6 documentation.

7 On to Page 2745. Oh, enhanced MeterFlow
8 for sub-flows. So this was a -- a case -- this is
9 another case where we -- in a special case for HTTP, we
10 were keeping track of multiple sub-conversations within
11 the flow on separate sub-structures.

12 So this would be something that would be
13 an example of a case where one connection or flow, as
14 you call it, could be a parent to multiple child -- what
15 I call sub-flows that would tally up the traffic volume,
16 you know, for those, you know, sub-contexts of -- of
17 just -- you know, of exchange within that connection.

18 So that would be -- an example of that
19 would be if an HTTP connection started off transfer --
20 exchanging text objects and then switched to an image
21 object and started transferring images -- so, for
22 instance, in a web page, you see a lot of text. And
23 then you see a bunch of images, right? So this would
24 then keep track of the text separate from the images and
25 classify them appropriately.

1 That was -- that was a very interesting
2 feature for the HTTP sub-system. And definition of
3 guidance, re-vamp flow structure. Oh, flow referencing.
4 Flow referencing was an interesting one because this was
5 the first time when we had inter-related parent and
6 child flows. So where we would actually connect and
7 reference -- cross-reference those objects into -- and
8 by cross-referencing them, making them effectively a
9 higher level structure.

10 Flow returning, flow creation
11 notification. These are just more interface
12 improvements. Flow morphing. I remember flow morphing.
13 That was nasty. But that's -- that's really just a -- a
14 nuance. No, those would be about the only things I
15 could see here.

16 QUESTION: And so going down further to
17 the -- the paragraph under the -- I guess it's code. It
18 says: MeterFlow state-based classification
19 capabilities.

20 ANSWER: Right.

21 QUESTION: Do you see that part?

22 ANSWER: Uh-huh.

23 QUESTION: Did you write the code
24 associated with that, as well?

25 ANSWER: Yes, I did. The -- first we

1 have the -- the well-known ports. Then we developed
2 some engines for, in this case, Oracle. I remember the
3 Oracle engine very well. And this is kind of another,
4 you know, instance where it's one thing to do well-known
5 ports, and it's another thing to do stateful port
6 tracking. And then another thing to then relate the --
7 the various objects together, various flows.

8 (Videoclip ends.)

9 THE COURT: Does that complete this
10 witness by deposition?

11 MR. BURESH: It does, Your Honor.

12 THE COURT: All right. Call your next
13 witness.

14 MR. BURESH: Your Honor, we call James
15 Torgerson by deposition, taken on 3/29/2017. This is
16 another inventor on the asserted patents.

17 THE COURT: How long do you expect this
18 deposition to run?

19 MR. BURESH: This is 3 minutes and 40
20 seconds, Your Honor.

21 THE COURT: All right. Proceed.

22 (Videoclip begins.)

23 QUESTION: And will you please state your
24 full name for the record?

25 ANSWER: James Franklin Torgerson.

1 QUESTION: And, Mr. Torgerson, where do
2 you reside?

3 ANSWER: I reside in Andover, Minnesota,
4 at 227 157th Avenue Northwest, in Andover.

5 QUESTION: And just so that we have a
6 clear record, the patents that you're named -- you're
7 named as an inventor on three patents, correct?

8 ANSWER: Correct.

9 QUESTION: Now, I believe you testified
10 earlier today that the products known as MeterFlow
11 Accelerator internally at Apptitude was never
12 commercially released; is that correct?

13 ANSWER: That's correct.

14 QUESTION: And why wasn't it released?

15 ANSWER: Because of, I believe, several
16 reasons, one of them being the fact that it didn't seem
17 to have enough -- enough -- I would guess that -- you
18 know, it basically wasn't going to be attractive as a
19 product anymore. That was No. 1.

20 And No. 2, it was very expensive to do
21 a -- an ASIC chip, okay? And the likelihood was that
22 there would still be bugs in it, and we'd have to make
23 another turn or two back to the foundry, which means
24 several million more dollars.

25 And so it just didn't look economically

1 attractive to continue with it and go any further with
2 it, and the marketplace didn't look like it was that big
3 anyway.

4 The other thing to it, as well, is that
5 the software applications -- put it this way, the Intel
6 chips were getting very fast. And so they could do a
7 lot of this information, and we didn't need the hardware
8 application as much anymore. They could keep up with
9 wire speed.

10 QUESTION: Okay. And do you recall the
11 time frame in which, kind of, the plug was pulled, so to
12 speak, on MeterFlow Accelerator when the project
13 was abandoned?

14 ANSWER: When we were at Hi/Fn. It was
15 one of the --

16 QUESTION: That would be after 2000,
17 right?

18 ANSWER: Yes -- well, somewhere --
19 somewhere in 2000 or beyond. So when Hi/Fn bought
20 Apptitude, you know, we continued to work on it in -- in
21 Hi/Fn with the idea of them going to -- going to foundry
22 with a chip. And we did some debugging and some working
23 on it at that point, getting all the timings done
24 correctly and so forth. And it was ready to -- I
25 believe within the -- certainly within the first year I

1 was there that it was ready to go to the foundry, and
2 then the decision was made to pull the plug.

3 QUESTION: And I believe you -- you gave
4 a couple reasons as to why the project was abandoned.

5 One, that it was wasn't -- was not
6 attractive to the marketplace. What do you mean by
7 that?

8 ANSWER: Well, the fact that, you know,
9 it would be fairly expensive, and it really wasn't
10 needed anymore because microprocessors were that fast
11 that they could actually keep up.

12 And so most of the implementations were
13 done in software and not being done in hardware. And it
14 didn't look like it was a -- it was a real big
15 marketplace, you know, with regard to how many customers
16 we would have that would buy that chip. It wouldn't be
17 that many. It just didn't look attractive.

18 (Videoclip ends.)

19 THE COURT: Does that complete this
20 witness by deposition?

21 MR. BURESH: It does, Your Honor.

22 THE COURT: Call your next witness.

23 MR. BURESH: Your Honor, Sandvine calls
24 Haig Sarkissian by deposition. His deposition was taken
25 on March 30th of 2017. And there is an allocation on

1 this witness. Sandvine has 8 minutes and 47 seconds,
2 and Packet Intelligence has 20 minutes, 48 seconds, for
3 a total time of 29 minutes and 35 seconds.

4 THE COURT: And do I take it the earlier
5 times are all to the Defendant?

6 MR. BURESH: That is correct, Your Honor.

7 THE COURT: Proceed with this witness by
8 deposition.

9 (Videoclip played.)

10 QUESTION: Good morning. Will you please
11 state your full name for the record?

12 ANSWER: Haig Sarkissian.

13 QUESTION: Do you hold any degrees -- any
14 technical degrees or educational degrees?

15 ANSWER: Yes.

16 QUESTION: And what are they?

17 ANSWER: I -- I hold a Bachelor's degree
18 in electrical engineering, and I hold a Master's degree
19 in electrical engineering.

20 QUESTION: And when did you obtain those
21 degrees, and I'm talking about years?

22 ANSWER: Bachelor's degree in 1983.
23 Master's degree -- oh, I'm sorry, yeah, 1983. And
24 Master's degree 1990.

25 QUESTION: In other words, was -- at the

1 time that you began meeting with Technically Elite, were
2 they a start-up company or they already had some
3 products on the market?

4 ANSWER: I did not know exactly what they
5 had, but I knew what they wanted us to design was
6 something very new.

7 QUESTION: Okay. And that -- that was a
8 little bit different than my question.

9 My question was: When you first met with
10 the folks at Technically Elite, did you understand
11 whether they had products already on the market or
12 whether they were basically a new start-up business?

13 ANSWER: I don't recall knowing whether
14 they had products on the market or whether they were
15 flat foot start-up.

16 QUESTION: And when you refer to a
17 product that would do packet processing, what are you
18 referring to? What does packet processing mean to you?

19 ANSWER: So our focus was to design a
20 semiconductor ASIC called the MeterFlow Accelerator, the
21 MFA, which would look at -- which would sit in a -- in a
22 point on a network, typically an Ethernet network, and
23 look at traffic and process packets in the traffic by
24 identifying headers and content and payload and -- and
25 count and keep statistics and allow a policy engine to

1 make decisions on what to do with packets.

2 QUESTION: And did you have any
3 understanding as to -- during that first meeting as to
4 whether Technically Elite had already developed systems
5 for performing packet processing?

6 ANSWER: I had understood that they had a
7 software solution called MFC, which is MeterFlow C, that
8 did some rudimentary things that were not sufficient to
9 serve the needs of the market. And as the market was
10 moving from 10 megabits to a hundred megabits and then
11 going to one gigabit speed, a semiconductor solution
12 together with NS (sic) capabilities was necessary to
13 meet the needs of companies like Cisco and others who
14 were looking for such a solution.

15 QUESTION: What did you understand that
16 you were going to be asked to do?

17 ANSWER: Design a chipset that met the
18 specifications that we were developing.

19 QUESTION: And specifically with respect
20 to packet count, what -- what type of functionality did
21 you understand you would need to be developing?

22 ANSWER: I understood that we had to keep
23 track of flows, not just packets, and associate packets
24 with conversations or flows that the packets belong to.

25 QUESTION: One of the items that you had

1 listed previously is what you understood your work to
2 potentially include would be more protocols. What did
3 you understand that specific work to be during that
4 first meeting with Technically Elite?

5 ANSWER: More critical you said? Is that
6 what you said? I'm having difficulty.

7 QUESTION: No. More protocols.

8 ANSWER: Oh, more protocols, I see. I
9 see.

10 Oh, there were thousands of protocols
11 that they needed to analyze, and I became familiar with
12 Internet protocols, and I learned that there are
13 different kinds of protocols, and there are
14 relationships between parent protocols and children
15 protocols, and a lot of other things, which was a very
16 complicated thing that needed a powerful processor to be
17 designed to do. That powerful processor had to have
18 special integrated circuits and parallel processing and
19 multiple dedicated sometimes programmable engines.

20 So to do all of those things, we started
21 architecting the MeterFlow Accelerator.

22 QUESTION: Okay. And when you
23 mentioned -- when you referred to thousands of protocols
24 that they needed to analyze, did you have any
25 understanding as to whether Technically Elite had

1 already, in their existing MeterFlow C products, were
2 already able to analyze some protocols?

3 ANSWER: My -- my understanding was that
4 this has never been done before. We were breaking new
5 grounds. We were designing or asked to design things
6 that had never been done before.

7 QUESTION: And when you were working on
8 the MeterFlow Accelerator, did you take any code bases
9 that were already existing at Technically Elite and use
10 those already existing code bases to help develop the
11 MeterFlow Accelerator?

12 ANSWER: No.

13 QUESTION: So you started from scratch?

14 ANSWER: We started from scratch. I
15 wasn't aware that anything was available. No, no code
16 was offered to me. We start from scratch.

17 QUESTION: I understood your testimony to
18 be that there was a wish list and a specification that
19 was shared with you by Technically Elite and that you
20 and Mr. Bares then developed a more detailed
21 specification based on your own work.

22 ANSWER: That's my high level
23 recollection, but I don't recall specifically what
24 documents were available. I know we whiteboarded things
25 on the board. We had -- we wrote things on the back of

1 a napkin. And we were essentially the semiconductor
2 guys saying, hey, Russell, what are your problems? What
3 -- what -- what are you -- what are you -- what can't
4 you do that you want the chip to do?

5 And we took notes, and we developed a --
6 an initial specification and then refined it over time.

7 So I don't recall whether Russell gave me
8 something in writing at that meeting or whether it was
9 all whiteboarding on a board. But this is when things
10 were being invented. This is when things were being
11 discussed and initially outlined.

12 QUESTION: And so I want to ask
13 specifically with respect to your consulting work for
14 Technically Elite and Apptitude whether your only
15 project with consulting for those entities specifically
16 was MeterFlow Accelerator?

17 ANSWER: So our project was that
18 MeterFlow Accelerator. There were no specific -- I
19 don't recall any specific term that restricted our
20 agreement to that, but I focused and concentrated on the
21 MeterFlow Accelerator. And --

22 QUESTION: And if you could -- go ahead.

23 ANSWER: Yeah, and -- many years later
24 when I was working with Hi/Fn when the MeterFlow
25 Accelerator was no longer a project, it was canceled at

1 some point, I worked on other projects that were not
2 MeterFlow Accelerator for Hi/Fn.

3 QUESTION: But while you were working
4 with Technically Elite and Apptitude as a consultant,
5 your focus was on MeterFlow Accelerator, and to the best
6 of your knowledge, you didn't work on any additional
7 projects for those entities?

8 ANSWER: That's what I remember, yes.

9 QUESTION: Okay. Who, to the best of
10 your knowledge, who were the individuals who were tasked
11 with working on MeterFlow Accelerator, who were the team
12 members?

13 ANSWER: So on the semiconductor side, it
14 was myself and Bill Bares. And later on, it was Mr. Jim
15 Torgerson was brought in.

16 QUESTION: Uh-huh.

17 ANSWER: And there was Skip Koppen --
18 Koppenhaver. Skip also worked on the project, as well
19 as Russell Dietz. And another team member was Joe
20 Maixner. Those are the individuals that I worked with
21 most of the time.

22 QUESTION: What was your role on the
23 team? What was your -- what were you responsible for?

24 ANSWER: So Bill and I were the
25 semiconductor guys. We were the architects and the

1 designers of the MeterFlow Accelerator. And the initial
2 phase of the project was doing the Verilog design,
3 writing software, testing modules, writing test code,
4 and then working with Skip to develop patterns and
5 packet flows and sample traffic that we would test the
6 system against to make sure that the required outputs
7 were being generated.

8 QUESTION: Okay. And -- and do you
9 recall particular functionalities that Mr. Koppenhaver
10 would say, wow, we couldn't do this in the software, but
11 you guys can do it in the chip?

12 ANSWER: Yeah, I recall being able to
13 architect a massively peril processor, multiple
14 processors essentially in the MeterFlow Accelerator.
15 And I recall him, you know, saying software, you can do
16 one thing at a time, but in hardware, you can do -- look
17 at the parallel processing that you guys can do. This
18 is very powerful.

19 So the device we designed had the
20 equivalent of multiple Intel processors up-to-date. But
21 with custom microcore custom software instructions that
22 we developed and designed to run things very, very fast.
23 At one clock rate instead of what typical Intel
24 processor would take five to 10 to seven clocks to do
25 one thing, we designed hardware that ran in parallel and

1 very fast. And Skip was always amazed about how much
2 more you could do when you implement things in hardware.

3 QUESTION: So I think though you're
4 talking about -- primarily about speed advantage, right?

5 ANSWER: A lot more -- a lot more than
6 speed advantage. I mean, to be efficient in deep packet
7 inspection and -- and packet processing, first, you have
8 to run at -- at wire speed. If you don't run at wire
9 speed, you lose data. And when you lose data, then you
10 don't have visibility of flows. So, first, you have to
11 run at -- at wire speed.

12 And second, you need to look at a lot of
13 things at the same time. So as we bring the packets in,
14 as the packets are moving through the wires and
15 registers of the semiconductor, we in parallel are
16 processing different sections of the packet in hardware.
17 So -- so what we designed was a lot more than speed.
18 It's parallel processing able to do flow classification
19 that was not possible before.

20 QUESTION: And when you say you're able
21 to do flow classification with the hardware that was not
22 possible before, you don't have an understanding as to
23 whether any flow classification was performed prior to
24 your work with Technically Elite, correct?

25 ANSWER: I know that the depth and the

1 level of -- of which was possible to do with MeterFlow
2 Accelerator, current Intel processors, the best Intel
3 processors were not able to do no matter what software
4 you wrote on it. So -- so a lot of the things we do --
5 we did was impossible to do because the -- unless you
6 did an ASIC, which is what we were doing, using standard
7 Intel processors, there wasn't enough processing power
8 to do those things.

9 You simply ran out of processing power
10 using Intel --

11 QUESTION: Okay.

12 ANSWER: -- semiconductors of 1998 or
13 1999.

14 QUESTION: Did you know -- in that 1998
15 or 1999 time frame, did you know of any other companies
16 who were doing Layer 7 recognition?

17 ANSWER: Layer 7, I did -- I did not
18 know. But I know -- I knew Cisco wanted it done, and
19 Technically Elite was trying to sell this to Cisco.

20 QUESTION: You just had mentioned Cisco.
21 Did you have -- was Cisco a customer that was asking --
22 basically driving the development of the technology by
23 Technically Elite?

24 ANSWER: There was common understanding
25 within Technically Elite that the initial and primary

1 customer who was helping Russell Dietz and the team to
2 find a product was Cisco.

3 QUESTION: Okay.

4 ANSWER: But I don't know of any
5 agreements. I have not seen any documentation. It was
6 highly confidential at that point, and we knew that if
7 we delivered this, if we meet the requirements, we had
8 the blessing of at least certain people at Cisco that
9 this is what needs to be done.

10 QUESTION: So in that sense, does -- does
11 atomic refer to this need for kind of speed and
12 additional processing power?

13 ANSWER: No.

14 ATTORNEY: Objection, form.

15 ANSWER: It means the low-level
16 ingredients the blocks needed and the key functions
17 needed. Like one of the functions was to generate flow
18 keys. And a flow key is essentially -- you look at the
19 whole packet. And then you come up with a code that's
20 unique based on certain attributes of that packet. And
21 then in the future, when you process subsequent packets,
22 those attributes will be consistent across multiple
23 packets. So you can tie them together, and you can tie
24 them to the same flow and the same conversation.

25 So -- so string search, we -- we talk

1 about and later on in -- Item 5 was one of the atomic
2 functions that needed to be defined that the process had
3 to perform. And there were lots of functions like that.
4 So this is -- initially when something new is being
5 designed, you know, you go in a room, you lock yourself
6 for two, three days, and that's what we did. And you
7 start blocking, whiteboarding, and certain subdivisions
8 and blocks are defined and separated. And then the
9 functions of each of those blocks we apparently called
10 them atomic functions.

11 QUESTION: So when you were referring to
12 state processing today for purposes of this deposition,
13 do you understand that to have a specific meaning in the
14 patent, or are you separately referring to it as the
15 specific code and instruction developed by Technically
16 Elite?

17 ANSWER: So I think as far as my
18 inventions are concerned or the patents that I was
19 involved in, I believe those are one and the same. My
20 understanding was before we started working this -- on
21 this project, there was no state processor in
22 existence -- in existence, and we were designing state
23 processor to enable state flow processing of flows,
24 which my understanding is that was not done before.

25 QUESTION: How about from Cisco, did

1 Cisco provide any requirements for MeterFlow Accelerator
2 projects, any functionality that Cisco --

3 ANSWER: We were not allowed to know
4 about Cisco, and I don't recall any specifics shared
5 with me about Cisco, but there was this unspoken
6 understanding that Cisco was behind driving the need.
7 And they would be one -- one of the potential customers
8 of the ASIC when it was ready.

9 QUESTION: When you say, we were not
10 allowed to know about Cisco, are you referring to kind
11 of the -- the development team was not allowed to --
12 really given access to Cisco information?

13 ATTORNEY: Objection, form.

14 ANSWER: Well, I think whatever the
15 arrangements were for, they were not commonly discussed
16 and -- but, you know, in 1999, I had gone through being
17 an engineer to a marketer and a sales and vice president
18 and business manager back to an engineer. I was always
19 curious about who is going to buy this. So I was
20 inquisitive about, so, who is going to buy this, who --
21 who is the customer, how many are they going to buy?
22 You know, I'm working on something very interesting, but
23 where is it going to come from?

24 And I got the sense at some point, I
25 don't recall how, that one of the potential target

1 customers was a switch maker, a big router maker, and
2 that was Cisco. So I don't remember the details, but 18
3 years from then, in the back of my mind was, you know,
4 one of the big potential customers was going to be
5 Cisco.

6 QUESTION: And this particular project
7 known as MeterFlow Accelerator never came to commercial
8 fruition, correct?

9 ANSWER: Correct.

10 QUESTION: And why is that? What
11 happened to it?

12 ANSWER: So approximately two years after
13 working on this, the Internet bubble burst, and there
14 were widespread cutbacks in the high-tech industry, and
15 companies had to refocus their resources on what
16 projects to fund and prioritize. And by then, a
17 MeterFlow project was under the umbrella of Hi/Fn who
18 made strategic decisions on where to continue investing
19 and what projects to put on hold, and this was a project
20 that was either put on hold or canceled. I don't
21 remember the real details, but we were asked to stop
22 working on it.

23 QUESTION: By the time that determination
24 was made, was -- had technology advanced enough to where
25 general microprocessors could generate enough power and

1 functionality for -- basically for the underlying
2 software to work without the need for hardware
3 implementation?

4 ANSWER: You know, in general, general
5 microprocessors advanced over time, as they did in those
6 years. Intel's approach was to up the speed, the clock
7 speed, of processors. And every year or two, they would
8 come out with the next processor with a slightly higher
9 speed.

10 I remember roughly at the beginning of
11 our project, processors were running at 1 gigahertz and
12 then 1.2 gigahertz, 1.4 gigahertz and so on. So there
13 was clearly improvement being made by Intel in the
14 industry on -- on faster speed processes.

15 But when you compared that to a
16 semiconductor implementation, any semiconductor
17 implementation that's custom made like our MeterFlow,
18 MFA device, depending on when you manufacture it and
19 commit it to certain processing technology, it would get
20 its own clock speed.

21 So the question is very relative because
22 if we had made the product in 2002 with the then current
23 clock processing speeds, we would have had a 10 to 1
24 advantage in speed that we designed the architecture to
25 do because of the customization of the device.

1 So if you take MFA and design it on 1
2 gigahertz and Intel comes up with a 10 gigahertz chip,
3 then they'll be equivalent.

4 But if you take MFA and put it on a 500
5 megahertz clock, it depends on how fast you run the
6 chip, it's a relative comparison between clock speeds
7 and then when you freeze your design relative to
8 advancements and process technology.

9 So -- so long answer is, there were
10 architectural advantages that superseded or provided
11 approximately 10X speed advantage at the same clock rate
12 compared to --

13 QUESTION: (Unintelligible) -- with the
14 MFA design?

15 ANSWER: With the MFA design compared to
16 standard generic Intel off-the-shelf processors.

17 QUESTION: And you're speaking in about
18 the 2002 time frame?

19 ANSWER: I'm speaking in general about
20 the architecture. If you take --

21 QUESTION: Okay.

22 ANSWER: -- the MFA chip in general and
23 compare it to an Intel processor in general and match it
24 with them with the clock speed, ours had advantages
25 because it was customized for this purpose.

1 If you freeze ours at a time with a given
2 clock and let Intel's processors advance with higher
3 speed clocks over the years, they have to get
4 approximately 10 times faster to match our capability.

5 QUESTION: So what was the state of the
6 MeterFlow Accelerator project at the time it was
7 canceled? Could you tell me about what percent complete
8 it was?

9 ANSWER: It was ready for tape out.

10 QUESTION: What does that mean?

11 ANSWER: All testing and validation had
12 been complete, and a check had to be written for
13 multiple million dollars to Toshiba or TFMC, or whoever
14 was going to make it, so they could start making the
15 films to -- to make the ASIC.

16 So -- so it was canceled because a huge
17 expense commitment had to be made to process the wafers,
18 and a business decision was made that -- you know,
19 initially when it was communicated to us, it was never
20 said it was canceled. It was said, oh, we're going to
21 postpone it because we're going to wait until we have
22 money and the market timing is right, and this is far
23 too advanced. And we -- you know, it was put on hold,
24 essentially, rather than canceled. And later on it was
25 put on indefinite hold which ended up to be canceled.

1 QUESTION: And when it was put on hold,
2 and is it safe to assume that there were no known
3 customers or companies that had already committed to
4 purchase the chips if it was -- if it was, you know,
5 basically sent to have the actual chips made? So
6 pre-ordered?

7 ANSWER: I was not involved in the sales
8 and marketing part of the MeterFlow Accelerator. I know
9 it was given a part number, a marketing part number. I
10 know product brochures were made. I think it was the
11 3100 or 3110 chip. There was a name, a part number
12 consistent with Hi/Fn part number terminology. And
13 whether they had interested customers or not, we had not
14 made -- we had not given them prototypes. You know, we
15 never made the chips. Usually in the life of creating a
16 semiconductor product, which I had done multiple times
17 at Standard Microsystems and at AT&T, bring in prototype
18 is having that prototype was a pre-cursor to me at AT&T
19 before we even started engaging with customers.

20 So this chip never had a prototype, but I
21 don't know how much sales and marketing was done and
22 whether they had customers waiting or not. I simply was
23 not involved.

24 QUESTION: Do you have an understanding
25 as to whether -- what was ultimately patented was

1 hardware specific or if it also included software
2 elements?

3 ANSWER: There were multiple patents.
4 Some of which the ones I was involved in, my name was on
5 it. Some others I was not a direct contributor. I was
6 not involved on it. And my recollection is that there
7 were many patents that covered all aspects of the total
8 solution.

9 QUESTION: The total solution, including
10 both hardware and software?

11 ANSWER: Correct.

12 QUESTION: When the MeterFlow Accelerator
13 project was put on hold, was it actually -- would you
14 consider the development of that technology to have been
15 complete, did it work?

16 ANSWER: We have tens of thousands of
17 tests that we had written to convince us that it was
18 ready for tape out and that it would have worked if
19 implemented. And all of our simulations showed that it
20 did work.

21 QUESTION: So Exhibit 2 is U.S. Patent
22 No. 6,954,789; is that correct?

23 ANSWER: Yes.

24 QUESTION: And you are listed as an
25 inventor on the patent, correct?

1 ANSWER: Yes.

2 (Videoclip ends.)

3 THE COURT: Does that complete this
4 witness by deposition?

5 MR. BURESH: It does, Your Honor.

6 THE COURT: All right. Counsel, approach
7 the bench, please?

8 (Bench conference.)

9 THE COURT: You have Nettles next?

10 MR. BURESH: Yes, Your Honor.

11 THE COURT: And then followed by
12 Stuckwisch?

13 MR. BURESH: Correct.

14 THE COURT: Okay. We're going to take a
15 short recess, and then we'll come back and begin with
16 Nettles.

17 MR. BURESH: Thank you, Your Honor.

18 (Bench conference concluded.)

19 THE COURT: Ladies and gentlemen of the
20 jury, we're going to take a short recess at this time.
21 You can simply close your notebooks and leave them in
22 your chairs. Take this opportunity to stretch your legs
23 and get a drink of water. We'll be back shortly to
24 continue.

25 Follow all my instructions, including not

1 to discuss the case among yourselves, and we'll be back
2 shortly.

3 The jury's excused for recess at this
4 time.

5 COURT SECURITY OFFICER: All rise for the
6 jury.

7 (Jury out.)

8 THE COURT: The Court stands in recess.

9 (Recess.)

10 (Jury out.)

11 COURT SECURITY OFFICER: All rise.

12 THE COURT: Be seated, please.

13 All right. Defendants, are you prepared
14 to call your next witness?

15 MR. BURESH: We are, Your Honor.

16 THE COURT: All right. Let's bring in
17 the jury, please.

18 COURT SECURITY OFFICER: Rise for the
19 jury.

20 (Jury in.)

21 THE COURT: Please be seated.

22 Defendants, call your next witness.

23 MR. BURESH: Your Honor, Sandvine calls
24 Dr. Scott Nettles.

25 THE COURT: All right. Dr. Nettles, if

1 you'll come forward. You've previously been sworn?

2 THE WITNESS: Yes, I have.

3 THE COURT: Please have a seat.

4 All right. Mr. Buresh, you may proceed.

5 MR. BURESH: Thank you, Your Honor.

6 DR. SCOTT NETTLES, DEFENDANTS' WITNESS, PREVIOUSLY SWORN

7 DIRECT EXAMINATION

8 BY MR. BURESH:

9 Q. Dr. Nettles, can you please state your name
10 for the record?

11 A. I'm Dr. Scott McBride Nettles.

12 Q. And introduce yourself to the jury with a
13 little background information, please.

14 A. So I grew up in a small town in South Alabama
15 called Andalusia, it's about half the size of Marshall,
16 but it -- it's a lot like Marshall. Every time I come
17 to Marshall, I'm -- I'm reminded of home. And my father
18 was the local high school band director, my mother ran
19 the local dance school, and so between the two of them,
20 they taught probably half of our town. And I think
21 that's probably why I got interested in being a teacher
22 is, you know, growing up in that sort of an environment.

23 Q. Tell us about your educational background, Dr.
24 Nettles?

25 A. Well, I graduated from Andalusia High School.

1 And from there, I went to Michigan State University
2 where I studied chemistry, and I got a Bachelor's degree
3 in chemistry. And then I went to Stanford University
4 where I started a Ph.D. program in chemistry.

5 After about three years, I decided that I
6 wasn't cut out to be a chemist, but I wanted to be a
7 computer programmer, and so I dropped out of that
8 program, and I started to work for a startup company as
9 a programmer.

10 And after about a year, I went to a research
11 lab that was part of Digital Equipment Corporation, I
12 was there for about three years. Then I decided I
13 wanted to go back to graduate school and get an advanced
14 degree in computer science. And I went to
15 Carnegie-Mellon University in Pittsburgh. And I got a
16 Master's degree, I think, in 1992. And then I earned my
17 Ph.D. in 1996 from Carnegie-Mellon in computer science.

18 Q. In between this chemistry education and your
19 computer science education, I believe you said you
20 worked as a programmer; is that correct?

21 A. Yes, sir, I was a professional full-time
22 programmer for about four years.

23 Q. Did that give you an opportunity to learn how
24 to actually write code?

25 A. Well, I hope that I actually learned how to

1 write code even before that, but that certainly is where
2 I -- I became especially proficient. I -- I wrote a lot
3 of code during the time that -- that I was a
4 professional programmer. And hearing Mr. Bowman talk
5 about the long hours that he put in building his system
6 certainly reminded me of that -- that part of my life.

7 Q. And did you do a thesis as part of your Ph.D.
8 program?

9 A. Yes, sir, I did. Part of a -- getting a Ph.D.
10 is that you have to get a -- you have to write a
11 dissertation, and part of that is to do original
12 research -- fairly extensive original research.

13 Q. So what was your original research in or
14 thesis in?

15 A. Well, the -- the title of my dissertation was
16 Concurrent Garbage Collection of Persistent Heaps. So
17 my specialty as a graduate student was high speed
18 garbage collection.

19 Q. I'm sorry. What is -- it's garbage
20 collection?

21 A. Yes, sir. It's -- it's not -- just to be
22 clear, it's not sanitation engineering. Garbage
23 collection refers to the process in -- in a computer
24 program you allocate memory, and sometimes that memory
25 becomes unused, and so periodically, you need to collect

1 up the unused memory. And the part of the system that
2 does that is called a garbage collector. And so I
3 studied how to do that very, very fast.

4 Q. Thank you.

5 So after your Ph.D., what'd you do?

6 A. Well, actually in the last year of my Ph.D., I
7 started my first faculty position, which was a little
8 intense. So -- but I started my first faculty position
9 at Penn, and sometime in the first year I got my Ph.D.
10 And I was at Penn for about four years, and then I went
11 to the University of Arizona. In both of those
12 universities I was in the Computer Science Department.

13 And then in 1999, I went to the University of
14 Texas at Austin where I became an electrical and
15 computer engineering professor.

16 Q. You said you had a faculty position at Penn.
17 What does that mean?

18 A. I was a professor.

19 Q. And were you a professor at Arizona?

20 A. Yes, sir, I was an assistant professor at both
21 of those universities.

22 Q. As well as at the University of Texas at
23 Austin; is that --

24 A. That -- that's correct. I was an assistant
25 professor at the University of Texas at Austin. That's

1 also where I received tenure.

2 Q. Okay. If we could group those together, your
3 -- your roles as a professor, could you describe the
4 classes that you have taught?

5 A. Yes, sir. So at -- at Penn, I taught classes
6 in computer architecture, how computers work. I also
7 taught advanced graduate courses in programming
8 languages topics. The teaching I've done that's the
9 most relevant to the issues here, though, started when I
10 was a professor at Arizona when I started teaching
11 computer networking. And then continued at the
12 University of Texas where I taught advanced
13 undergraduate, first year graduate, computer networking,
14 probably 20, 25 different times. And also advanced
15 graduate classes in the networking area, plus I taught
16 our sophomores how to program.

17 Q. Did you teach any classes that would have
18 addressed packet flows?

19 A. Well, yes, sir. I mean, the computer
20 networking classes were all about how the packet switch
21 network worked. And so the topic of -- the idea of
22 flows is -- is a very typical and standard one inside of
23 networking. So that was something -- I probably
24 mentioned flows the first day, and certainly that was
25 something -- a topic of regular discussion in the class.

1 Q. What about research while you were a
2 professor, did you do research?

3 A. Yes, sir. All professors have to do research.
4 When I was at Penn, I worked in an area called active
5 networking. And then when I got to the University of
6 Texas, I worked in active networking for a period of
7 time. And then I became -- began working in wireless
8 networking.

9 So that -- that's a little easier to
10 understand than active networking. If you think about
11 the WiFi networks that many of us are familiar with and
12 that our phones use, I was researching advanced versions
13 of those networks. So I was building -- I'm a systems
14 builder, so I was building prototypes of wireless
15 networks using advanced technology in the network and
16 advanced technology in the radios.

17 Q. During your time as a professor, did you have
18 any experience with packet networking devices?

19 A. Yes, sir. Again, as -- as I mentioned, I -- I
20 build things and study them as part of my research. And
21 so at Penn, as part of the active networking work, I
22 built a series of research prototypes that explored the
23 idea that we could make our computer networks highly
24 programmable. And so, for example, I built a system
25 called an active bridge, and then I built something

1 called an active Internet in which the packets that
2 we've been hearing about in the last couple of days were
3 actually little computer programs. And the routers were
4 both programmable themselves but also executed those
5 little computer programs as they moved through the
6 network.

7 And then as I mentioned, at UT, a lot of my
8 focus was on wireless network working. And I built
9 wireless networking devices. So actually both the radio
10 part and the low-level part of the networking stack, I
11 built devices that -- that implemented that
12 functionality so that I could study how to build such
13 devices.

14 Q. During your time as a -- as a professor, did
15 you receive any -- any awards for your work?

16 A. Yes, sir. I received a number of teaching
17 awards, but I think probably the -- the award I'm most
18 proud of was a -- a grant that I received early in my
19 career from the National Science Foundation called a
20 career grant. And that's a grant that's given to new
21 professors, and it's a little unusual. Usually the
22 grants that you get are just for your research, but in
23 this case, the grant is both for your teaching and your
24 research.

25 And in particular, I -- I proposed to and

1 designed a set of courses involving in -- in what we
2 call experimental computer science. And so, in
3 particular, I'm very interested in how you evaluate the
4 performance of computer systems. And so I was
5 teaching -- I was starting to teach classes about how to
6 do that. And that was quite novel at the time, and I
7 think contributed to me getting that award.

8 Q. What is the National Science Foundation?

9 A. Well, that's the part of the -- one of the
10 parts of the federal government, but one of the most
11 important ones that funds science and engineering
12 research in this country. So very important part of a
13 young's professors life is the National Science
14 Foundation.

15 Q. All told, Dr. Nettles, between your various
16 colleges or -- I'm sorry, universities that you worked
17 at, how many years were you a professor?

18 A. I was a professor for 18 years.

19 Q. What do you do now?

20 A. I'm a consultant.

21 Q. And how did you get started working as a
22 consultant?

23 A. Well, I was in my office at UT working, and I
24 got a telephone call from an attorney in Houston. And
25 he was looking for someone to help him with a court case

1 here in Marshall, and I accepted that job. And that
2 resulted in the first time that I came to Marshall and
3 testified in this courtroom.

4 Q. So you made a full-time transition from
5 professor to consultant at some point; is that correct?

6 A. Yes, sir. When -- when you're a college
7 professor, one of the things that the university allows
8 you to do is to work part time, but at some point --
9 well, actually, I mean, I can tell you, in 2013, I
10 realized that I was more interested in being a full-time
11 consultant and less interested in being a -- a full-time
12 college professor.

13 Q. Why did you make that transition from one to
14 the other?

15 A. Well, I like to do different things. So, you
16 know, I've already mentioned I was a chemist and then I
17 studied garbage collection and then I studied active
18 networking and then I studied wireless networking. And
19 those are fairly big changes in your research career.

20 And so I was getting a bit tired of being a
21 college professor. And I had done it for a long time.
22 And I was really enjoying the consulting work that I was
23 doing. It's very interesting, and you learn a lot. And
24 so I decided it was time to make a change.

25 Q. Prior to this case, have you ever conducted a

1 comparison between patents and a product to determine if
2 they align or if there's infringement?

3 A. Yes, sir, many times.

4 Q. How many times?

5 A. Well, it depends -- the answer to that depends
6 a little bit on the level of detail, but if we think
7 about the level of detail that I've -- I've used in this
8 particular case, probably 25 or 30 times.

9 Q. Have you ever testified before in a United
10 States District Court?

11 A. Yes, sir. I've testified approximately 10
12 times. I think five times here in Marshall.

13 Q. Now, have you ever worked with Sandvine
14 before?

15 A. No, sir, I haven't.

16 Q. Prior to this case?

17 A. Prior to this case, no, sir.

18 Q. Now, do you -- as a -- as a consultant, do you
19 analyze these patent matters from both the Plaintiff and
20 Defendants' side?

21 A. Yes, sir, I do work both for Plaintiffs --
22 Plaintiffs and Defendants.

23 Q. And what's the proportion?

24 A. I do about two-thirds of my consulting for
25 either Plaintiffs or when I work on matters that are in

1 front of the PTAB -- that's the Patent and Trademark
2 Board -- so that's the Patent Office, then I work for
3 the patentholder. So about two-thirds for the Plaintiff
4 or patentholder.

5 Q. Now, as a consultant in a role like you're
6 doing here today, do you get paid for the work you do?

7 A. Yes, sir. This is my job.

8 Q. And -- and how much do you get paid?

9 A. I get paid \$490 an hour.

10 Q. Does the fact that you are -- are paid to do
11 your analysis impact your analysis?

12 A. No, sir, not at all. It just is my job, so
13 that's -- the fact that I get paid is why I do the
14 analysis. But the results of the analysis are
15 independent and don't depend on the outcome of any of
16 the matters that I work on.

17 Q. Could you describe how your education that
18 you've talked to us about and the -- the work experience
19 that you've talked to us about, how those are relevant
20 to the testimony and analysis you've done in this case?

21 A. Yes, sir. Well, first, I'm an expert in
22 computer networking. I taught computer networking many
23 times. And I've done extensive research for a long time
24 in computer networking. I've built devices like the
25 ones that we're talking about here.

1 But also because I'm a systems builder and was
2 a working programmer, I understand a lot about how these
3 systems work inside. And, for example, part of what
4 we've been doing in this case is to review code. And
5 I've spent a lot of my life working on code and looking
6 at code. So that's -- that's certainly one of the
7 important skills that I have -- bring to bare here.

8 Q. And are you qualified to offer opinions to a
9 reasonable degree of engineering certainty?

10 A. Yes, sir, I am.

11 MR. BURESH: Your Honor, I tender Dr.
12 Nettles as a an expert in network monitoring technology
13 and networking environments.

14 THE COURT: Is there objection?

15 MR. SKIERMONT: No objection, Your Honor.

16 THE COURT: All right. The Court will
17 recognize the witness as an expert in the designated
18 fields.

19 Continue, Counsel.

20 Q. (By Mr. Buresh) Dr. Nettles, what
21 specifically were you asked to do in this case from an
22 analysis perspective?

23 A. Well, I was asked to examine the patent and
24 the related materials like the file history, so that I
25 could understand the patent, the claim construction

1 order, and also to look at Sandvine's accused products
2 and to compare the two to try to understand whether or
3 not there was infringement or not, and also to
4 understand Dr. Almeroth's opinions about this -- this
5 same matter.

6 Q. How do the -- the claims, which are the end of
7 the patent with the numbers, how do the -- the claims of
8 the patent affect your analysis or play into your
9 analysis?

10 A. Well, eventually, according to U.S. patent
11 law, the claims are -- actually each claim is an
12 invention separate and independent, and so each claim is
13 made up, as we've seen, of limitations.

14 And so if a patent is infringed, each and
15 every limitation must be met. And so my analysis
16 basically is on a claim-by-claim,
17 limitation-by-limitation basis, and I'm looking to see
18 whether or not each and every limitation is met or
19 whether or not some are missing, in which case the
20 patent isn't infringed.

21 Q. And you said each and every limitation. What
22 happens if one limitation is missing from a claim in an
23 accused product?

24 A. Well, then the product doesn't infringe that
25 claim.

1 Q. So they all have to be present?

2 A. Every one of them, yes, sir.

3 Q. Now, are you familiar with the idea of
4 connection flows?

5 A. Yes, sir, I am.

6 Q. There's been a lot of testimony about
7 connection flows in this case, wouldn't you agree?

8 A. Yes, sir, there has been quite a bit of
9 testimony about that.

10 Q. Can you describe for the jury what connection
11 flows are?

12 A. I can. But I'll need some visual aids which
13 I've prepared.

14 And here we see the familiar example of a --
15 of a smartphone, and we're going to use the even more
16 familiar example, at least over the last few days, of
17 Facebook.

18 Q. Okay. And, Dr. Almeroth (sic), using the
19 Facebook discussion, and I think we're all familiar
20 with, can you describe connection flows, please?

21 A. Yes, sir, but I'd prefer to be called Dr.
22 Nettles.

23 Q. What did I call you?

24 A. Dr. Almeroth.

25 Q. Oh, certainly my apologies.

1 A. So here we -- here we see the Facebook page,
2 and what we're going to do first is we're going to look
3 at what happens when Facebook fetches photos. And so
4 this is the -- this is the topology, the arrangement
5 that we're going to look at.

6 And in this case, we have Bob's cell phone,
7 which we're going to call Bob, we have the photos
8 server, which is what Bob's going to communicate with to
9 get the photos. But in the middle, we have this
10 monitor, and that's actually what this case is about.
11 It's about the monitors of the packets. So we're going
12 to focus the rest of this discussion primarily on what
13 happens in the monitor.

14 Q. And, Dr. Nettles, can you please describe in
15 the context of a connection flow monitor, what does
16 happen in the monitor?

17 A. Well, the monitor is going to track the
18 connection flows and put them into a flow table. We've
19 talked about flow tables a number of times. So why
20 don't we see how that works.

21 So we see Bob sending a packet to the photo
22 server, and the monitor intercepts that packet and it
23 analyzes it. And in the process of analyzing it, it can
24 learn that this is a packet that's going from Bob to
25 photos.

1 And now we're going to look inside of the
2 monitor, and we're going to look at what happens in the
3 flow table. And what we see here is the flow table is
4 empty, and so when we go to put this flow, this Bob
5 photos flow into the table, it's going to go where the
6 arrow indicates.

7 Let's see that happen.

8 So now we have our first entry in the flow
9 table between Bob and photos, and the packet count here
10 has been incremented to one, it's going to keep track of
11 the number of packets.

12 Q. Now, Dr. Nettles, this term "flow-entries" has
13 been kind of floating around, if you will. What -- what
14 is a flow-entry?

15 A. Well, essentially it's a row in one of these
16 flow tables. So it will actually be some kind of data
17 structure. But at least in these illustrations, you can
18 think of the flow-entry as the individual rows.

19 Q. And how does -- and, again, specifically in a
20 connection flow packet monitor, how does the monitor
21 identify the connection flow?

22 A. Well, at a high level, a connection flow is
23 identified by the end points, just like we see here.
24 Bob and photos, that's the end points, and so that's how
25 you identify a connection is by its end points. And

1 we'll talk about some details in a few minutes.

2 Q. Please proceed with your discussion. Are we
3 going to see additional connections, Mr. -- Dr. Nettles?

4 A. Yes, sir. So next we're going to be accessing
5 this coupon from Sonic, and so now we see that there's
6 going to be another connection between Bob and the
7 coupons server.

8 We're going to send a packet, the packet's
9 going to be analyzed, the monitor's going to figure out
10 this is between Bob and ads, and now we're going to add
11 this to the table.

12 And notice, it goes into a new place. And the
13 reason it goes into a new place is it's a new flow.
14 There's -- Bob is one of the end points still, but the
15 other end point is the coupon server. And so we need to
16 make a new entry so that we can keep track of that
17 connection flow independently of the previous connection
18 flow.

19 Q. So if I understand this, if both of the end
20 points are not the same, it will be a new connection
21 flow?

22 A. That's exactly correct.

23 So going on, we're going to access the video
24 server. And, again, we send the packet, we do the
25 analysis, we get a new flow because now it's between Bob

1 and the video server. We add it to the table, and we
2 indicate that there's been one packet.

3 Q. And, again, at the high level we're discussing
4 here, what defines a connection flow?

5 A. Well, at the high level we're talking about
6 here, it's the end points, it's the Bob and video. And
7 that's what's being used to index this table.

8 Q. Now, are connection flows -- when we get below
9 the end points to the next level down, is there more
10 specific information that defines a connection flow?

11 A. Yes, sir. We're to see in a few minutes that
12 it's actually something called the 5-Tuple that
13 describes the connection flow. And the 5-Tuple is
14 actually just a more detailed representation of the end
15 points than these simple Bob and videos that I've used.

16 Q. And before we get to that, what happens if
17 we -- if we double back now and a packet is on one of
18 the flows we've already identified, what happens in that
19 context?

20 A. Well, let's see what happens.

21 So now we're going to go back to photos. And
22 in this case, what's going to happen is the photo server
23 is going to send back a packet through the monitor. The
24 monitor is going to analyze it, and it's going to say
25 this packet is also in the Bob photos connection.

1 And so this time that's going to match, so we
2 go looking for Bob and photos in our table, and it
3 matches. And so instead of making a new entry, we're
4 going to just increment the packet count so that we can
5 keep track of how many packets there are.

6 Q. Now, you said the phrase "we look for an entry
7 and it matches." What do you mean by that?

8 A. Well, it means that -- it means that we -- we
9 index this -- we index this table, we do that using
10 something called a hash function. And we index that
11 table, and if the place in the table where we would
12 expect to find that entry is there, then it matches.

13 So here, we saw that Bob and photos were
14 already in the table, and so that was a match.

15 If Bob and photos hadn't been in the table, it
16 wouldn't have matched, we would have had to make a new
17 entry.

18 Q. So if the identity -- or if the information
19 that identifies the connection is a match, then you
20 already have that connection flow?

21 A. That's correct.

22 Q. Okay. Now, you mentioned a 5 -- do I call it
23 Tuple or Tuple, I'm sorry?

24 A. Well, I call it Tuple, but other people call
25 it Tuple.

1 Q. I'll stick with you then.

2 The 5-Tuple you mentioned earlier -- well,
3 what kind of information is contained in the 5-Tuple?

4 A. Well, we've talked about this some already.
5 But what really is going to happen when we analyze the
6 packet, if it's part of an IP network, which is the case
7 for the networks that we've been talking about here,
8 we're going to find that there is a source IP address,
9 you could think about that as Bob's phone number, and
10 there's a source port, you could think about that as the
11 extension in Bob's bedroom. There's a destination IP
12 address, you could think about that as the phone number
13 of the photo server.

14 Q. If I could stop you there.

15 This extension analogy you're drawing, what --
16 what -- could you describe that a little further? What
17 is an extension?

18 A. Well, a telephone extension. I mean, if you
19 think about a business, you'll often be asked what -- do
20 you know the extension. And if you know the extension,
21 you can push in the number, and it will get you directly
22 to the person.

23 The IP gets you to a computer, and the port
24 actually gets you to a program that's running on that
25 computer.

1 Q. Okay. And I think I interrupted you at source
2 port. So if you could continue from there?

3 A. So the next piece -- so -- so those two pieces
4 of information together identify Bob. And the
5 destination IP address is like the photos's phone
6 number, the destination port is like the extension at
7 the photo -- at the photo server. And those two pieces
8 of information identify the photos server.

9 And then finally, there's something called the
10 transport proto -- protocol. You could think about that
11 as the language that's going to be talked -- spoken,
12 sorry, spoken on this connection flow.

13 Q. Now, does every connection on the Internet
14 have a 5-Tuple?

15 A. Yes, sir. As -- as long as -- as we're
16 talking about Internet packets, which it would be the
17 case when we talk about the Internet, they would all
18 have 5-Tuples.

19 Q. And does each 5-Tuple uniquely identify a
20 connection flow?

21 A. Yes, sir. This -- this is -- the Internet has
22 been architected with this idea, the idea of the source
23 addresses are at one layer, the source ports are at
24 another layer, the transport protocol is at the same
25 layer as the ports. This is part of the design and

1 implementation of the Internet.

2 So this is -- this is very expected that a
3 connection flow would work like that. And, in
4 particular, the TCP protocol, which is mentioned here --
5 let's see if I can -- I'm going to try to use this
6 screen a little bit here.

7 That particular protocol is a
8 connection-oriented proto -- protocol, so it's
9 actually -- part of its design is how do you set up
10 these connections.

11 Q. Now, earlier we saw the flow table in the
12 higher level example.

13 A. That's right.

14 Q. What does the flow table look like when the
15 5-Tuple information is included?

16 A. So here's an illustration of the same flow
17 table that we've been talking about before, but with the
18 5-Tuple expanded. So we see, for example, in the first
19 entry that it's going to be Bob's IP address. The
20 source port is going to be some number. It's going to
21 be the photo's IP address. The destination port is
22 going to be some number. And here the transport
23 protocol is TCP.

24 Q. So this is an expanded version of the earlier
25 example we looked at?

1 A. Yes, sir. In this case, the -- the
2 information about the source and destination is depicted
3 in the same way that would actually appear in the
4 Internet.

5 Q. Now, Dr. Nettles, is this -- and, again, I
6 understand this is very simplified, but is this a
7 simplified version of what Sandvine's system looks like?

8 A. Well, this is simplified, but it's -- it's
9 actually not a significant simplification. There is
10 more information in the table to keep track of
11 additional things besides packet counts.

12 But when it comes to indexing this, how you
13 look up things up in the table, this is how it's done.

14 Q. In the Sandvine PTS?

15 A. In the Sandvine system -- and in many other
16 systems actually, but in the Sandvine system.

17 Q. Now, have you heard the term "conversational
18 flow" as it's been discussed in this case?

19 A. Yes, sir, I have.

20 Q. And have you had an opportunity to come to an
21 understanding of what a conversational flow, as compared
22 to a connection flow, is?

23 A. Yes, sir, I have.

24 Q. Before we get to that, prior to this case, had
25 you ever heard of something called a conversational

1 flow?

2 A. No, sir. That seems to be unique to this
3 particular set of technologies, the MeterFlow
4 technology. It's not a common term in the industry or
5 in the academic literature.

6 Q. If I could put a finer point on that, does
7 it -- does the term "conversational flow" come out of
8 the patents that are at issue in this case?

9 A. Yes, sir. And that's -- that's the -- really
10 the only place that I personally know of them occurring.

11 Q. Has it been an industry term to your
12 awareness?

13 A. No, sir.

14 Q. Have you ever heard the term outside the
15 context of the patents in this case?

16 A. No, sir, I haven't.

17 Q. Now, you understand the term "conversational
18 flow" has been construed by Judge Gilstrap?

19 A. I do.

20 MR. BURESH: If we could go to the next
21 slide, please.

22 Q. (By Mr. Buresh) Is this the Court's claim
23 construction, Dr. Nettles?

24 A. Yes, sir, this is the Court's claim
25 construction of conversational flow. And I think it's

1 important to look at it before we start looking in
2 detail at what a conversational flow is because --

3 THE COURT: Dr. Nettles -- Dr. Nettles,
4 he simply asked you was this the construction the
5 Court's adopted. You need to wait and let him ask
6 questions and then respond to his questions.

7 THE WITNESS: Yes, Your Honor.

8 THE COURT: All right. Let's continue.

9 Q. (By Mr. Buresh) Dr. Nettles, what defines a
10 conversational flow with reference to the Court's claim
11 construction?

12 A. Well, we see here that it says: The sequence
13 of packets that are exchanged in any direction as the
14 result of an activity. So the activity defines the
15 conversational flow.

16 Q. What defines a connection flow?

17 A. The end points.

18 Q. And what defines the conversational flow?

19 A. The activity.

20 Q. Did you apply the Court's claim construction
21 in reaching your understanding of what a conversational
22 flow is?

23 A. Yes, sir, I did. I'm required to do so.

24 Q. And as you did with the connection flow, did
25 you prepare a demonstrative to help you explain a

1 conversational flow?

2 A. I did.

3 MR. BURESH: If we could turn to that
4 next.

5 Q. (By Mr. Buresh) And, Dr. Nettles, is the
6 demonstrative you prepared an accurate representation of
7 conversational flows?

8 A. Yes, sir, it is.

9 Q. And does it use the Facebook example we've
10 been using in this case?

11 A. It does.

12 Q. Could you describe to the jury using your
13 demonstrative how a conversational flow is defined?

14 A. Yes, sir. So, again, we're going to use the
15 Facebook example. We're going to look at the photo
16 server again. And act -- and actually in this case, the
17 -- the packet traffic is going to be just the same in
18 the previous case as in the previous example.

19 What's going to be different is what the
20 monitor does, but that's important because that's -- the
21 monitor is the focus of this case. So we're going to
22 see the same set of communications, but we're going to
23 see what happens in the monitor when the monitor is
24 tracking conversational flows.

25 Q. Dr. Nettles, if I could stop you there. Is

1 there anything different about the network itself,
2 Facebook, photos, the phone?

3 A. No, sir. This is -- this is exactly the same.
4 If the monitor wasn't there, nothing would be different
5 about this at all. We're just going to see a difference
6 that's in the monitor.

7 Q. And do we have to look at how the monitor
8 actually operates to discern that difference?

9 A. Yes, sir. This -- this case is really about
10 how the monitor operates in some detail. And so it's
11 important for us to look under the hood and understand
12 what's happening inside the monitor.

13 Q. So what happens when the first packets start
14 flowing?

15 A. So just as before, the packet goes into the
16 monitor, and it's analyzed. But this time, instead of
17 finding the end points, what the monitor finds is that
18 this is part of Bob's Facebook conversation. So this is
19 going to be the key that's going to be used to index the
20 table.

21 Q. And is there a flow table in a conversational
22 flow monitor?

23 A. Yes, sir, there is a flow table.

24 Q. And how is a flow-entry created using this
25 conversation key?

1 A. Well, in the -- in basically the same manner.
2 We're going to look to see if that conversation key is
3 in the table. And if it isn't, then we're going to add
4 it. And we're going to keep track of how many packets
5 have been -- have been part of this conversation.

6 Q. So what happens if we add the advertisement
7 server for Facebook?

8 A. So, again, we see the packet that's going
9 between Bob and coupons. And the analysis in this case
10 is different than the previous analysis. It finds out
11 that this packet is also part of Bob's Facebook
12 conversation because this is all part of the interaction
13 that Bob is doing in his Facebook activity.

14 Q. Now, is there another connection being used
15 for these coupon packets?

16 A. Yes, sir. Just as we saw before, there is
17 another connection, but the monitor doesn't care about
18 the connection. It cares about the conversation, the
19 activity.

20 Q. So because it's part of the same activity,
21 it's part of the same overall conversation?

22 A. That's correct.

23 Q. What happens if we add the video server?

24 A. Well, first, we're going to see the
25 conversation for the coupon server go into the table.

1 This time it matched because it's not a new
2 conversation, even though it's a new connection, and we
3 see the packet count incrementing.

4 And now we see for the video -- again, the
5 analysis is going to show that this is Bob's Facebook
6 conversation. And similarly, it's going to match in the
7 table, and the packet count is going to be incremented.
8 So now we've seen three packets on Bob's Facebook
9 conversation.

10 Q. Are these three connections -- photos,
11 coupons, and videos -- in the context of a
12 conversational flow monitor, are those bundled together?

13 A. Yes, sir. This analysis that we're doing in
14 the monitor is seeing that they're related and
15 connecting them. And they're being stored in this
16 example as a single entry.

17 Q. Did you hear Bob -- or Don Bowman's testimony
18 that there could be upwards of 50 connections --

19 MR. SKIERMONT: I'm going to object, Your
20 Honor.

21 Q. (By Mr. Buresh) -- in a Facebook example?

22 THE COURT: Just a minute, Counsel.

23 MR. SKIERMONT: My apologies.

24 THE COURT: What's your -- what's your
25 objection?

1 MR. SKIERMONT: The objection is beyond
2 the scope of the report.

3 THE COURT: What's the response for
4 Defendant?

5 MR. BURESH: Your Honor, the anatomy of
6 a conversational flow is throughout his report, and all
7 he is getting ready to describe is what -- how a
8 conversational flow is constructed using 50 different
9 connection flows as he heard from Mr. Bowman's
10 testimony.

11 MR. SKIERMONT: Your Honor, that's --

12 THE COURT: Well, I'm not interested in
13 what he's about to describe. You haven't asked those
14 questions yet. I'm interested in the question that's
15 before the Court right now.

16 You had something else, Mr. Skiermont?

17 MR. SKIERMONT: Yes. May I approach?
18 May we approach?

19 THE COURT: Approach the bench, Counsel.
20 (Bench conference.)

21 THE COURT: This is what we talked about
22 this morning. And if I need to get the report, send the
23 jury out, I'll do it. But it's a real disruption, and I
24 don't want to if I don't have to.

25 MR. SKIERMONT: Your Honor, Mr. Bowman

1 testified he's never spoken to Dr. Nettles. Dr. Nettles
2 testified he's never spoken to Mr. Bowman. So why
3 Counsel would be able to ask -- so -- so the point would
4 be, any question to Dr. Nettles about what Mr. Bowman
5 said today or any other day is outside the scope of his
6 report.

7 MR. BURESH: Your Honor, his report
8 clearly covered the distinctions and definitions of both
9 connection flows and conversational flows. He was
10 clearly sitting in the courtroom today and heard Mr.
11 Bowman's testimony. He is entitled to address evidence
12 within the scope of his report. I do not believe the
13 report is entitled to specify every piece of evidence on
14 which he might eventually opine within the scope of his
15 opinions.

16 THE COURT: Mr. Skiermont, do you
17 disagree that the report substantively addresses this
18 area?

19 MR. SKIERMONT: I -- what the report does
20 not address is access to the CTO of the company as a
21 basis for any of his opinions of how this system works.

22 THE COURT: All right. And, Mr. Buresh,
23 it's your intention to ask this witness to comment on
24 the testimony that Mr. Bowman gave and to -- to either
25 agree or disagree and to --

1 MR. BURESH: Your Honor --

2 THE COURT: -- fine tune where necessary
3 where he testified to?

4 MR. BURESH: Your Honor, the -- I can ask
5 the exact same question without mentioning Don Bowman if
6 that will alleviate the --

7 THE COURT: The only objection I've heard
8 that it's in relation to Mr. Bowman and his testimony.
9 If you can readdress the question without involving Mr.
10 Bowman's prior testimony, then I don't hear any basis
11 for objection from the Plaintiff.

12 MR. BURESH: I can do that, Your Honor.

13 THE COURT: Then we'll resolve it that
14 way. Rephrase your question.

15 MR. BURESH: Thank you, Your Honor.

16 (Bench conference concluded.)

17 THE COURT: All right. Rephrase your
18 question, Counsel.

19 Q. (By Mr. Buresh) Dr. Nettles, are you aware
20 that Facebook can have up to 50 connections established
21 in certain circumstances?

22 A. Yes, sir, I'm aware of that.

23 Q. And in that circumstance where you would have
24 upwards of 50 connections in a Facebook activity, how
25 many conversational flow-entries would there be?

1 A. Upwards of 50. Excuse me, conversational
2 flow?

3 Q. Yes, I'm sorry.

4 A. Sorry. For the conversational flow there
5 would only be one because that would all be part of the
6 same activity.

7 Q. So no matter how many connections are involved
8 in an activity, a conversational flow would just be one?

9 A. Yes, sir, that reflects the Court's claim
10 construction where it says basically all the packets
11 that are part of an activity are part of the
12 conversational flow.

13 Q. Now, how does a packet monitor know how to
14 create these conversational flows? How does that
15 process look?

16 A. Well, it has to go through some kind of
17 recognition process, and that's described in the patent
18 as to how the patent proposes to do it.

19 Q. Is it a complicated process?

20 A. Yes, sir, it can be quite complicated because
21 it's not always clear that these particular connections
22 are related to each other.

23 Q. And how are connection flows defined?

24 A. Well, they're defined by the 5-Tuple.

25 Q. Is that a simple or a complicated process to

1 use a 5-Tuple?

2 A. Well, it's a simple process because the data
3 that makes up the 5-Tuple is in every IP -- or every TCP
4 or UDP packet and it's in a known fixed location that's
5 part of the standard. And so it's quite simple to go to
6 exactly those locations and extract them.

7 Q. Would a packet monitor that utilizes only
8 connection flows be a different design than a packet
9 monitor that uses conversational flows?

10 A. Yes, sir, it's a very different design.

11 MR. BURESH: Could we bring up PTX-9,
12 which is the '789 patent.

13 Thank you.

14 Q. (By Mr. Buresh) Dr. Nettles, have you
15 reviewed the '789 patent?

16 A. Yes, sir, I have.

17 Q. Did you read all of it?

18 A. Yes, sir, many times.

19 Q. So you're familiar with the '789 patent?

20 A. Yes, sir, I am.

21 Q. Before we --

22 MR. BURESH: If I could pull up Column 2,
23 please.

24 Q. (By Mr. Buresh) Before we get into the
25 specifics, what are the columns of a patent, Dr.

1 Nettles?

2 A. Well, part of the patent is the written
3 description, that's part of the patent specification,
4 that's what we're looking at here. And because we need
5 to navigate in the packet -- in the patent and find
6 specific places, the columns are numbered so that we can
7 refer to them specifically to find information.

8 Q. You used the term "specification." What does
9 that mean?

10 A. Well, the specification is the description
11 that is in the patent so that -- it basically explains
12 the invention so that the claims which are the actual
13 inventions themselves make sense to someone who's
14 skilled in the art.

15 Q. Do the words in the specification represent
16 the words of -- of the applicants or inventors?

17 A. Yes, sir, these are their words describing
18 their invention.

19 Q. And these are part of what was filed 15 years
20 ago, 15-plus years ago?

21 A. Yes, sir, exactly.

22 Q. Now, Dr. Nettles, did the inventors have
23 anything to say about the distinction between connection
24 flows and conversational flows?

25 A. Yes, sir, they did.

1 MR. BURESH: If we could focus in on
2 Column 2, Lines 42 to 53.

3 Q. (By Mr. Buresh) We have here the first couple
4 of sentences of this paragraph highlighted, do you see
5 that?

6 A. Yes, sir, I do.

7 Q. Is this the inventors describing connection
8 flows?

9 A. Yes, sir, this is.

10 Q. And what do they describe?

11 A. They say: Some prior art packet monitors
12 classify packets into connection flows. The term
13 "connection flow" is commonly used to describe all the
14 packets involved with a single connection.

15 Q. And that phrase, "single connection," as you
16 understand that, what does that mean?

17 A. Well, that's -- in -- in this context, it's
18 indicating -- typically, it would be a TCP connection,
19 actually, but this concept also applies to UDP packets,
20 but it would mean a single pair of end points.

21 Q. Defined by, for example, a 5-Tuple?

22 A. Well, exactly, the 5-Tuple.

23 Q. That first sentence says: Some prior art
24 packet monitors classify packets into connection flows.
25 What does it mean by "prior art packet monitors"?

1 A. Well, prior art is art that comes before the
2 patent. And so what they're telling us is that before
3 this patent was applied for, there were packet monitors
4 that could classify packets into connection flows. So
5 they're telling us that this kind of packet monitor is
6 prior art, it's not their invention. Their invention is
7 going to be something else.

8 Q. What is their invention as described in this
9 paragraph?

10 A. A conversational flow is, I think, the heart
11 of their invention.

12 Q. And do you see any language in this second
13 sentence that shows the inventors are making a contrast?

14 A. Well, I -- I think the contrast is probably
15 most clear in the third sentence where it says "on the
16 other hand." "Conversational flow, on the other hand,"
17 that's making it clear that there are connection flows,
18 and on the other hand, there's a conversational flow.
19 So that's drawing a line between those two concepts.

20 Q. How do the inventors define a conversational
21 flow in this paragraph?

22 A. A conversational flow, on the other hand, is
23 the sequence of packets that are exchanged in any
24 direction as a result of an activity. For instance, the
25 running of an application on a server as requested by a

1 client.

2 Q. Now, is this discussion here in Column 2
3 consistent with Judge Gilstrap's claim construction?

4 A. Yes, sir. And -- and, in fact, you'll see
5 that almost exactly this same language occurs as the
6 first part of the claim construction for conversational
7 flow.

8 Q. Are you familiar with the concept of a file
9 history, Dr. Nettles?

10 A. Yes, sir, I am.

11 Q. And what is a file history?

12 A. Well, when you apply for a patent, you don't
13 just automatically get it. The Patent Office is going
14 to look at that patent and going to figure out whether
15 or not they think there's some other invention that came
16 before that anticipates it.

17 And so there's going to be an interaction back
18 and forth between the applicants and the Patent Office,
19 and the recording of those interactions make up the file
20 history.

21 So that informs us as to what the Patent
22 Office thinks about the patent and what the patent
23 owners say about -- about the Patent Office's thoughts.

24 Q. Now, can you -- can you find additional words
25 from the inventor in the file history?

1 A. Yes, sir, you can. What happens is if
2 you're -- if you're very lucky, you make your
3 application, the Patent Office looks at it, they say
4 great, we're going to give you a patent. That doesn't
5 happen that often. What usually happens is the Patent
6 Office rejects the patent, and says here's some prior
7 art that we think has the same invention in it.

8 And then the applicants have a chance to
9 respond and explain to the Patent Office why their
10 invention is different from that prior art. And so
11 those explanations are, again, statements by the
12 applicants that are explaining what their patent is
13 about directly to the Patent Office.

14 Q. And we've heard the -- the word -- I think I
15 used it once, I think you've used it a couple times, but
16 applicants. What does that mean?

17 A. Well, the applicants are the inventors.
18 They're the people who are applying for the patent.

19 Q. Did the inventors distinguish between
20 connection flows and conversational flows in the file
21 histories for the asserted patents?

22 A. Yes, sir, they did.

23 MR. BURESH: If we could pull up DX-53.

24 Q. (By Mr. Buresh) Is this the -- is this a file
25 history in this case?

1 A. Yes, sir, it is.

2 Q. And -- excuse me.

3 MR. BURESH: If we could turn to Bates
4 No. Packet Intelligence 16205, please.

5 Q. (By Mr. Buresh) In this file history, what
6 did the inventors say with respect to distinguishing
7 conversational flows from connection flows?

8 A. Well, what's happened here is that they've
9 applied for this patent, the Patent Office has rejected
10 the patent, and it said that there's a piece of prior
11 art called Anderson, which is another patent, that
12 contains the same invention. And so there's no reason
13 to grant them this patent because the invention's
14 already been made.

15 And so they're distinguishing against
16 Anderson, so they're explaining how their patent is
17 different from Anderson.

18 And the first thing they say is it's important
19 to be able to distinguish between the term "connection
20 flow," commonly used to describe all packets involved
21 with a single connection, and a conversational flow as
22 used in the present invention.

23 Q. Are the inventors indicating the importance of
24 the distinction in this statement?

25 A. Yes, sir. And they're indicating that

1 connection flows are part of the prior art, but their
2 invention is conversational flows.

3 Q. What is stated in this second highlighted
4 sentence?

5 A. It says: Unlike Anderson -- so it's saying
6 that Anderson doesn't have this -- the present invention
7 is able to identify and classify conversational flows
8 rather than only connection flows, including gathering
9 statistics on the flows.

10 Q. Now, if a prior -- I'm sorry, if a packet
11 monitor is able to identify only connection flows, are
12 the inventors saying that's not their invention?

13 A. Yes, sir, exactly.

14 Q. Now, I understand we put this highlighting on
15 this demonstrative, but the bolding, where did that come
16 from?

17 A. The bolding was done by the applicant. So the
18 bolding is where they're emphasizing to the Patent
19 Office the things that they think are especially
20 important.

21 Q. What happened in this file history after the
22 inventors made this statement to the -- the Patent
23 Office about the importance of this distinction?

24 A. Well, they made this explanation and some
25 others. And the Patent Office went back and continued

1 the examination in light of these explanations. And,
2 again, the Patent Office said, no, we think Anderson
3 anticipates this art.

4 So, again, they rejected the patent
5 application to Anderson.

6 Q. At some point, did the inventors need to make
7 changes to their actual claims in order to get this
8 patent allowed?

9 A. They did. After the -- the second rejection,
10 there was a phone conversation with the patent examiner.
11 And after the phone conversation, they made an
12 additional response in which they made changes to the
13 language of their claims. And after that, the patent
14 issued.

15 MR. BURESH: If we could turn to DX-52,
16 and I'd like to go to Bates No. Packet Intelligence
17 15923.

18 Q. (By Mr. Buresh) Is there some claim language
19 from the file history on this slide?

20 A. Yes, sir. This is explaining how they changed
21 Limitation (b) so that they made additions and
22 subtractions so that their patent could eventually
23 issue.

24 Q. How do we see the additions versus
25 subtractions?

1 A. Well, the additions are the underlined
2 characters, so that's new information that they're
3 adding to the claim -- new -- new -- new requirements in
4 the invention. And then the strikeouts are the places
5 where they're taking away language.

6 Q. And what were the inventors adding to the
7 claims?

8 A. Well, at the bottom, we see a large addition
9 which starts off with a conversational flow including an
10 exchange. And basically what they're doing is adding
11 the definition of a conversational flow, plus some
12 additional information about a conversational flow
13 having to do with states. So they're making the claim
14 more specific and explaining what some parts of it are.

15 THE COURT: Counsel, approach the bench,
16 please.

17 (Bench conference.)

18 THE COURT: I just want to make sure, Mr.
19 Buresh. This sounds a lot like you're attempting to go
20 behind the Court's claim construction of conversational
21 flows. You're putting up intrinsic evidence before the
22 jury that's typically only raised in the Markman
23 process. I'm worried that you are trying to avoid
24 contradicting the construction in form, but you may be
25 trying to do so in substance.

1 What can you tell me to assure me that
2 that's not where you're going?

3 MR. BURESH: Your Honor, the purpose of
4 this portion of the examination is to establish the
5 importance of the distinction between the two concepts
6 that are described in the patent as a conversational
7 flow versus a -- a connection flow. And simply to point
8 out --

9 THE COURT: Talk a little softer, please.

10 MR. BURESH: Yes, Your Honor. Simply to
11 point out the times that the inventors have emphasized
12 that distinction and the importance of that distinction
13 to their claimed invention. It is not to in any way
14 circumvent the Court's claim construction.

15 THE COURT: Well, you've -- you need to
16 be careful that you limit what you're doing to trying to
17 emphasize that distinction only and not invite the jury
18 to disregard the Court's claim construction.

19 MR. BURESH: Absolutely, Your Honor.

20 THE COURT: And I'll -- at this point
21 there's no objection that's been raised, but I am
22 concerned. It's very atypical for me to see prosecution
23 history and this kind of evidence put on during a jury
24 trial.

25 MS. ABDULLAH: Your Honor, and we

1 actually were just exchanging notes about this, as well.
2 There's another concern, which is that Sandvine has
3 agreed to drop any defenses related to prosecution
4 history estoppel. So to the extent that this is going
5 that way in terms of claim scope, that would be an
6 objection we would raise, as well.

7 THE COURT: Well, as I see it, this is
8 relevant only to the issue of infringement or
9 non-infringement, and it needs to be targeted to that.

10 MR. BURESH: Correct, Your Honor.

11 THE COURT: Okay. Let's go forward.

12 MR. SKIERMONT: Thank you, Your Honor.

13 (Bench conference concluded.)

14 THE COURT: Let's proceed.

15 Q. (By Mr. Buresh) Dr. Nettles, the -- the
16 underlining of "for containing" that we see on this
17 slide and the cross out of "that may contain" --

18 A. Yes, sir.

19 Q. -- what was the effect of that change?

20 A. Well, the thing that was omitted, "that may
21 contain," says it -- it may contain one or more
22 flow-entries, but it may not. That's permissive sort of
23 language. Whereas the language "for containing," which
24 is what it was switched to is restricted language. It
25 says that the flow-entry da -- database is for

1 containing flows of this form, not maybe it has flows of
2 this form. That's what it's for.

3 MR. BURESH: If we could put up the next
4 demonstrative slide, please.

5 Q. (By Mr. Buresh) Dr. Nettles, does the term
6 "conversational flow" appear in every asserted claim in
7 this case?

8 A. Yes, sir, it does. And we see that here.
9 These are all of the claims. It's a little small, but
10 the yellow highlighting shows you the places where
11 conversational flow appears.

12 Q. Does the term "connection flow" appear in any
13 of these claims?

14 A. No, sir, it does not.

15 Q. Did the inventors invent a packet monitor that
16 utilizes only connection flows?

17 A. No, sir, they did not.

18 Q. What did they invent?

19 A. They invented packet monitors that use
20 conversational flows.

21 Q. Based on your review of this material that
22 we've just looked at from the patents and the Court's
23 claim construction, how important is the distinction
24 between conversational flows and connection flows in the
25 context of these inventions?

1 A. It's a crucial distinction. It's -- I think
2 it's fair to say, it's the heart of the distinction --
3 the difference -- the heart of the invention.

4 Q. What, in your opinion, is the key concept of
5 the asserted patents in this case?

6 A. Conversational flows.

7 Q. In the patents -- excuse me. In the patents,
8 how are conversational flows identified by the packet
9 monitor?

10 A. I mean, there's -- there's some diagrams that
11 explain at least one of the ways the inventors propose
12 to -- to identify them.

13 MR. BURESH: If we could pull up PTX-9,
14 which is the '789 patent?

15 And go to Figure 3, please.

16 Q. (By Mr. Buresh) Is this what you were just
17 describing Dr. Nettles?

18 A. Yes, sir. This is one of the block diagrams
19 that's in the patent, and it describes one of the
20 possible embodiments of -- of the invention, one of the
21 ways you can implement the invention.

22 Q. And how do you see that from Figure 3?

23 A. Well, I mean, part of it is because I've also
24 read the written description, and I know that this is
25 describing the -- the whole system.

1 So I guess I -- I guess I need to have
2 understood some more of the patent to know that
3 that's -- that this is complete.

4 Q. Okay. And with that understanding, what in
5 Figure 3 is describing the process of creating the
6 conversational flow?

7 A. Well, the -- the focus of the claims at issue
8 in this case have to do with recognizing the flow and
9 then putting it into the flow table and finding out if
10 it's a new flow or an existing flow.

11 And that's being done in the upper left-hand
12 part -- actually, if you'd include the next box.

13 So the focus of -- the focus of the -- of what
14 we're talking about here are the -- is this process
15 right here. The packet comes in, it's analyzed and
16 recognized, it's extracted, you build a unique
17 conversational flow key and you look up that key from
18 the known records. So that's the look-up in the flow
19 table.

20 Q. And is that similar to the process you've
21 described in your animation?

22 A. Yes, sir. The first three boxes there is
23 the -- looking at the packet and figuring out what's
24 going on and when you get that conversational flow key.
25 And then the last box there is the actual look-up.

1 And then the part where it gets into the table is -- is
2 a little bit in some other di -- part of the diagram.

3 Q. Now, are there other figures that further
4 describe this process in the -- in these patents?

5 A. Yes, sir. So each one of these, 304, 306,
6 312, and 314, are their own figures. Those are Figures
7 5, 6, 7, and 8 of the patent.

8 MR. BURESH: Could we turn to Figures 5,
9 6, 7, and 8?

10 Q. (By Mr. Buresh) And, Dr. Nettles, are these
11 the figures that further describe the process of
12 creating that conversational flow key?

13 A. Yes, sir. The first three are creating the
14 conversational flow key. And then the last figure,
15 Figure 8, which is on the -- the lower left-hand side,
16 is the actual look-up in the table.

17 Q. I don't want to walk through all these
18 figures, but could you, from your perspective as an
19 expert in this case, just describe generally how this
20 process works?

21 A. Well, first, it's going to parse the packet,
22 that's Figure 5.

23 Then it's going to extract information from
24 the packet, that's Figure 6.

25 Then it's going to build the unique flow

1 conversation key, that's Figure 7.

2 And then finally, it's going to do the
3 look-up, that's Figure 8.

4 Q. How would you characterize that process?

5 A. Well, it's a very flexible process. This --
6 this particular invention can recognize packets of a lot
7 of different kinds. It can -- it can recognize packets
8 well beyond IP packets, but it is complex.

9 Q. Now, as part of your investigation in this
10 case, Dr. Nettles, did you investigate how the Sandvine
11 PTS products work?

12 A. Yes, sir, I did.

13 Q. And what did you look at or use to perform
14 your investigation?

15 A. Well, I looked at three main sources of
16 evidence for the Sandvine products: I looked at
17 deposition testimony, I looked at documentation of a
18 number of different kinds, and I looked at the source
19 code for the Sandvine system.

20 Q. Why did you review the source code?

21 A. Well, the patent claims really focus on how
22 the invention works, not just what it can do but how it
23 works. And to really understand how a system works, the
24 best thing to do is to look at the source code because
25 that's what the programmers wrote to make it work.

1 Q. Is there any way for source code to not
2 accurately describe how a system operates?

3 A. Well, it's -- it's -- it's what's going to be
4 executed to actually cause the system to -- to operate.
5 So, no, sir.

6 Q. You mentioned that you also reviewed
7 deposition testimony; is that correct?

8 A. Yes, sir.

9 Q. Did you review Don Bowman's deposition
10 testimony?

11 A. Yes, sir, I reviewed Mr. Bowman's testimony.

12 Q. How do the PTS products that you analyzed, how
13 do they operate with respect to flow identification?

14 A. Well, they identify connection flows, and they
15 do that using a 5-Tuple.

16 Q. Do they use only connection flows?

17 A. Yes, sir, only connection flows.

18 Q. What did the inventors describe as not being
19 their invention?

20 A. Monitors that use only connection flows.

21 Q. Now, have you prepared a demonstrative to
22 describe the operation of the Sandvine system?

23 A. Yes, sir, I have.

24 MR. BURESH: If we could pull that up
25 next?

1 Q. (By Mr. Buresh) And, Dr. Nettles, does this
2 accurately -- does this accurately depict the Sandvine
3 implementation as you have analyzed it?

4 A. Yes, sir, except with the exception that there
5 are in the Sandvine system additional fields beyond the
6 ones that we see here. But this reflects the fact that
7 the Sandvine system uses a 5-Tuple to index the table,
8 it reflects the fact that the Sandvine system is going
9 to keep track of packet counts and other statistics, and
10 it also reflects the fact that when the first few
11 packets come through, we don't know what the application
12 is yet, but eventually, that application column is -- is
13 going to be filled in. But when we create these
14 entries, it's blank. Actually, it -- it's actually
15 identifying as the -- as the actual real value inside
16 the system. But it doesn't know the application yet.

17 Q. Does the Sandvine system create a flow-entry
18 for every single connection flow that it encounters?

19 A. Yes, sir, it does.

20 Q. And does the Sandvine system define these
21 flow-entries based upon the 5-Tuple information?

22 A. Yes, sir, that's how you look up the
23 flow-entries, and that's how you figure out if one
24 exists or needs to be added.

25 Q. Does the Sandvine system use anything other

1 than connection information to identify these
2 flow-entries that we're seeing?

3 A. No, sir, it does not.

4 Q. Now, you mentioned that there were some other
5 columns in the flow table in the real PTS products; is
6 that correct?

7 A. Yes, sir.

8 Q. And does that other information that's not
9 depicted in this animation play any role, whatsoever, in
10 flow identification?

11 A. No, sir. The 5-Tuple is used to look up the
12 flows.

13 Q. On your animation or demonstrative, excuse me,
14 Dr. Nettles, there's some open rows between the
15 connection flows in the table; is that correct?

16 A. Yes, sir.

17 Q. And why is that depicted?

18 A. Well, because the way that this table is
19 maintained is by using something called hashing, and
20 hashing isn't going to put the table entries
21 consecutively like in my earlier demonstration. It's
22 going to deliberately spread them out. That's part of
23 why you use hashing. So there's going to be space in
24 the -- in the table between these connections that we've
25 seen.

1 Q. Now, from an engineering standpoint, Dr.
2 Nettles, was Sandvine's PTS system implemented in this
3 flow identification as you would have expected?

4 A. Yes, sir. Because the -- this idea of a
5 connection is really baked into the Internet and TCP
6 protocols. This is a very standard way of identifying
7 packet flows and manipulating information about packets
8 and tracking packets. It's not -- it wasn't innovative
9 for Sandvine to use this idea. It's -- it's the idea
10 that you would expect them to use if they want the
11 system to perform well.

12 Q. How simple is it to identify flows based on
13 connection information?

14 A. Well, you have to extract five fields from a
15 packet, which are in known locations in the packet. And
16 then you have to combine them together to make a cache
17 key. So it's pretty simple.

18 Q. How simple is it to identify a conversational
19 flow entry?

20 A. Well, the way that it's shown in the patents
21 is -- is very complicated. I can't really say for sure
22 the simplest way, but I can tell you it's going to be a
23 lot more complicated than just looking up five fields
24 that are in known locations.

25 Q. Have you reviewed the source code of the

1 Sandvine PTS products that is responsible for creating
2 and maintaining flow-entries?

3 A. I have.

4 Q. Did you find any evidence whatsoever of a
5 conversational flow?

6 A. No, sir, I did not.

7 Q. Before you reviewed the source code, did you
8 talk to Don Bowman?

9 A. No, sir. I think we heard earlier that the
10 first time I talked to Don Bowman was -- was last week,
11 or I think it might have actually been the week before
12 last, but it's been very recent.

13 Q. Why did you not talk to Don Bowman before you
14 analyzed the source code?

15 A. Well, I -- I wanted to take an independent
16 look at the source code. I wanted to understand the
17 source code before I talked to one of the inventor --
18 one of the inventors of the Sandvine product so that I
19 would have a fresh view of what was going on in the
20 system.

21 Q. Are you aware that for an infringement
22 analysis, you have to -- excuse me, you have to compare
23 the accused products, in this case the PTS products, to
24 the actual claims of the asserted patents, correct?

25 A. Yes, sir, that's what it means to do a patent

1 claim analysis.

2 Q. Is it your understanding that that analysis
3 needs to be performed from the perspective of one of
4 ordinary skill in the art?

5 A. Yes, sir, that's my understanding.

6 MR. BURESH: If we could turn to the next
7 slide, please.

8 Q. (By Mr. Buresh) And before we look at this
9 further, could you describe for the jury what that
10 concept is, the person of ordinary skill in the art?

11 A. Yes, sir. So patents are technical. And so
12 we need to know who the audience is, who's supposed to
13 be reading this patent, and who needs to be able to
14 understand this patent. But these patents, for example,
15 need to be understood by someone who knows about
16 networking.

17 And so the idea of a person of ordinary skill
18 is to get an idea of who the reader is going to be. And
19 it's not going to be someone who is an inventor or, you
20 know, has extraordinary skills. It's just going to be
21 an ordinary person who understands the matters at hand.

22 Q. And how would -- or what experience would a
23 person of ordinary skill in the art have in this case?

24 A. Well, the definition that I've proposed and
25 that I've used primarily is that they would have an

1 education of a Bachelor's degree or equivalent in
2 electrical engineering, computer engineering, computer
3 science, or related field, or they might have work
4 experience that would substitute for that. And then
5 they would have one or two years of work experience in
6 networking environments, including at least some
7 experience with network traffic monitors, analyzers,
8 and/or firewalls and/or other intrusion detection
9 systems.

10 Q. Do you possess this level of ordinary skill in
11 the art?

12 A. Yes, sir. And it's actually important that I
13 possessed it at the time that the patents were applied
14 for. Maybe it's when they're issued, I -- I don't
15 remember, but I did possess this level of skill. And to
16 be honest, more than this level of skill at that time.

17 Q. Were you familiar at this time with people
18 that were at this precise level of skill?

19 A. Yes, sir. At this time, I was teaching
20 networking to seniors and first-year graduate students.
21 And a lot of my students were actually -- came from
22 industry to get their Master's degree after they had
23 worked for some time. And so I know at the relevant
24 time period, I would know hundreds of people at this
25 level of skill.

1 Q. Did you perform a claim-by-claim infringement
2 analysis in this case?

3 A. Yes, sir. That's what I was required to do.

4 Q. And in doing so, did you apply Judge
5 Gilstrap's claim constructions?

6 A. Yes, sir. Again, that's a very important
7 aspect of the analysis.

8 MR. BURESH: If we could pull up the next
9 slide, please.

10 Q. (By Mr. Buresh) On this slide are each of the
11 terms that have been construed by the Court. Do you see
12 that?

13 A. Yes, sir, I do.

14 Q. And, Dr. Nettles, did you apply each and every
15 one of these constructions in your analysis?

16 A. Yes, sir, I did.

17 MR. BURESH: If we could turn now to the
18 '751 patent, PTX-7. And if we could, just back out for
19 one moment.

20 Q. (By Mr. Buresh) I want to look first at Claim
21 1, Dr. Nettles. Do you see that on this page?

22 A. I do. It's in Column 50, around Line 23
23 through 60, maybe. That's -- that's it.

24 Q. Okay. And it begins: What is claimed is.
25 Is that correct?

1 A. Yes, sir.

2 MR. BURESH: All right. If we could
3 focus in on Limitation (b), please.

4 Q. (By Mr. Buresh) Dr. Nettles, did you compare
5 the Sandvine PTS products to Claim 1 of the '751 patent?

6 A. Yes, sir, I did, limitation-by-limitation.

7 Q. And what were your conclusions?

8 A. My conclusions were that this claim was not
9 met by Sandvine's system.

10 Q. And why is that?

11 A. Because Sandvine's system doesn't contain
12 conversational flows.

13 Q. Where do we see that in this Claim Limitation
14 (b) that we're looking at?

15 A. Well, the first place that we see it is the
16 highlighted entry where it says: A flow-entry database
17 for containing one or more flow-entries for previously
18 encountered conversational flows.

19 Q. And what is that talking about, that
20 particular claim language?

21 A. Well, this is explaining how -- so what's
22 happened here is that you've received a packet, and now
23 you're going to look it up. And you're going to look it
24 up in a flow-entry database, and that flow-entry
25 database is for containing one or more flow-entries for

1 previously encountered conversational flows.

2 So that database is going to be like the flow
3 table that we were looking at for conversational flows.
4 It's going to have flow-entries. And if it has a
5 flow-entry, it's going to be for a previously
6 encountered conversational flow.

7 Q. Do the PTS products recognize conversational
8 flows?

9 A. No, sir. They recognize connection flows.

10 Q. Do the PTS products contain one or more
11 flow-entries for previously encountered conversational
12 flows?

13 A. No, sir, not at all.

14 Q. What do they contain from a flow-entry
15 perspective?

16 A. Flow-entries for connection flows that are
17 indexed by 5-Tuples.

18 Q. What did the inventors say that they did not
19 invent?

20 A. They did not invent flow tables that contain
21 only connection flows.

22 MR. BURESH: Could we go to the wherein
23 limitation?

24 Q. (By Mr. Buresh) This is another limitation
25 within Claim 1 of the '751 patent; is that correct?

1 A. Yes, sir.

2 Q. And is this limitation satisfied by the
3 Sandvine PTS products?

4 A. No, sir. Again, it requires the flow-entry
5 database to store flow-entries for a plurality of
6 conversational flows.

7 Q. And why is this limitation not satisfied by
8 the PTS products?

9 A. Because the flow-entry database in the PTS
10 products store connection flows.

11 Q. Dr. Nettles, do the Sandvine PTS products
12 infringe Claim 1 of the '751 patent?

13 A. No, sir, they do not.

14 Q. Why not?

15 A. Well, because they don't have conversational
16 flows at all, and they also don't have a flow table that
17 contain entries for conversational flows.

18 Q. Dr. Nettles, if only one limitation is missing
19 from a claim, can it be infringed?

20 A. No, sir. You have to meet each and every
21 limitation.

22 MR. BURESH: Could we go next to Claim 5
23 of the '751 patent?

24 Q. (By Mr. Buresh) Do you recognize this as
25 another asserted claim from the '751 patent?

1 A. I do.

2 Q. And is Claim 5 infringed by a Sandvine PTS
3 product?

4 A. No, sir, it's not.

5 Q. Why not?

6 A. Well, Claim 5 is what we call a dependent
7 claim, so it depends on another claim. You can think
8 about it as including the other claim by reference.
9 And here it says a method according to Claim 1, and we
10 already talked about why Claim 1 wasn't met. And since
11 Claim 1 wasn't met, there's no way that you can include
12 it and suddenly magically cause things that weren't met
13 before to be met now. So if Claim 1 is -- is not
14 infringed, Claim 5 can't be.

15 Q. Is there any way that if Claim 1 is not
16 infringed, that Claim 5 could be infringed?

17 A. Not according to the law, as I understand it.

18 Q. Dr. Nettles, have you reached an opinion as to
19 whether Claim 5 of the '751 patent is infringed by the
20 Sandvine PTX products (sic)?

21 A. I have, and it is not infringed by the
22 Sandvine PTX (sic) products.

23 MR. BURESH: If we could turn next to
24 PTX-9, which is the '789 patent.

25 And I'd like to look at Claim 19 of the

1 '789 patent. And if we could, please focus in on
2 Limitation (d).

3 Q. (By Mr. Buresh) Now, Dr. Nettles, have you
4 performed an analysis as to whether Claim 19 of the '789
5 patent is infringed by the Sandvine PTX (sic) products?

6 A. Yes, sir, I -- I performed a
7 limitation-by-limitation analysis.

8 Q. And this limitation we're looking at here,
9 Limitation (d), do the PTS products satisfy that
10 limitation?

11 A. No, sir, they do not.

12 Q. Why not?

13 A. Well, basically the same reason as before,
14 this requires a memory for storing a database comprising
15 none or more flow-entries for previously encountered
16 conversational flows. The Sandvine products don't have
17 conversational flows at all, and they definitely don't
18 have flow-entries for previously encountered
19 conversational flows.

20 Q. In light of your analysis, Dr. Almeroth (sic),
21 do the Sandvine PTS products infringe the '789 patent?

22 A. Dr. Nettles believes that they do not infringe
23 the '789 patent.

24 Q. I apologize again, Dr. Nettles.

25 A. That's okay.

1 Q. It's been a long day.

2 A. I understand.

3 THE COURT: Next question.

4 MR. BURESH: Yes, Your Honor.

5 If we could turn next to the '725 patent,
6 which is at PTX-3.

7 Q. (By Mr. Buresh) And I'd like to focus in on
8 Claim 10, do you recognize this claim?

9 A. I do.

10 Q. And, Dr. Nettles, do the PTS products satisfy
11 each limitation of Claim 10 of the '725 patent?

12 A. No, sir, they do not.

13 Q. Why not?

14 A. Because, again, this requires conversational
15 flows, and it requires identifying the packets as
16 belonging to a conversational flow. Sandvine's system
17 doesn't have conversational flows, so -- and it doesn't
18 identify them.

19 MR. BURESH: Could we highlight the
20 language from this blow-out, identifying the packet as
21 belonging to the conversational flow?

22 Thank you.

23 Q. (By Mr. Buresh) Dr. Nettles, do the PTS
24 products identify any packets as belonging to a
25 conversational flow?

1 A. No, sir, they do not.

2 Q. What do they do in this respect?

3 A. They identify packets as belonging to
4 connection flows.

5 Q. And if a PTS product only identifies packets
6 as belonging to a connection flow, can they infringe
7 this claim?

8 A. No, sir, they can't.

9 Q. Dr. Nettles, in light of all of your analysis
10 and having reviewed each and every one of the asserted
11 claims in this case, do you have an opinion as to
12 whether Sandvine's PTS products infringe any asserted
13 claim?

14 A. Yes, sir, I do. And they do not infringe any
15 of the asserted claims.

16 Q. Now, as part of this case, did you have an
17 opportunity to consider Dr. Almeroth's analysis?

18 A. Yes, sir, I do. I looked at it extensively.

19 Q. What were your impressions of Dr. Almeroth's
20 analysis?

21 A. Well, my initial impressions, and this was
22 confirmed by his testimony yesterday, left me a little
23 perplexed because some parts of his analysis were very
24 detailed. They talked about very specific
25 implementation issues in the flow table, but all of the

1 evidence that he presented in that detailed analysis
2 seemed to support my understanding which is that there
3 are only connection flows.

4 And then when it came to the parts of the
5 analysis that were trying to establish conversational
6 flows, which I thought would have been a very important
7 and -- part of the analysis, that focused on quite
8 high-level sort of information and didn't really look
9 under the hood, just sort of talked in general about how
10 Sandvine's products could work.

11 Q. Now, this specific evidence that you looked at
12 from Dr. Almeroth, did it identify a flow table?

13 A. Yes, sir, it did.

14 Q. And did the flow table he identified include
15 only connection flows?

16 A. Yes, sir, it did.

17 Q. And were the connection flows entries that he
18 identified based upon connection information?

19 A. Yes, sir, they're indexed by the 5-Tuple.

20 Q. Did he identify any information that is used
21 to look up a packet other than connection flow
22 information?

23 A. No, sir.

24 Q. As you understand it, based upon reviewing his
25 analysis, how can he say there's a conversational flow?

1 A. Well, I really am perplexed by this because my
2 understanding is that there's a clear distinction
3 between the two, but he seems to believe that he can
4 show a connection flow table and then erase that
5 distinction and say it's a conversational flow table.

6 MR. BURESH: If we could turn next to Dr.
7 Almeroth's slides at Slide 48.

8 Q. (By Mr. Buresh) On this slide that Dr.
9 Almeroth utilized, there are some deposition testimony
10 from Don Bowman; is that correct?

11 A. Yes, sir. This --

12 Q. And --

13 A. -- is Mr. Bowman's deposition testimony.

14 Q. And I apologize for interrupting you.
15 Is there -- have you reviewed Don Bowman's deposition
16 testimony in this case?

17 A. I have.

18 Q. And did you consider it in reaching your
19 opinions?

20 A. I did.

21 Q. What does Don Bowman's testimony that's on
22 this screen describe?

23 A. Well, he's explaining some things about the
24 flow records in his system and where they're stored,
25 what -- what their structure is.

1 Q. And this flow record that's described by Mr.
2 Bowman, what is that flow record?

3 A. It's a connection flow record.

4 Q. Is a connection flow record any evidence of a
5 conversational flow?

6 A. Not in my opinion.

7 MR. BURESH: If we could go next to Slide
8 49.

9 Q. (By Mr. Buresh) Now, on this slide, we have
10 the architecture, correct? PTSD versus PTSM?

11 A. Yes, sir.

12 Q. And in the upper box, there's this description
13 of flows, do you see that?

14 A. Yes, sir.

15 Q. What type of flows is this describing in the
16 Sandvine system?

17 A. Connection flows -- flows. All -- all the
18 flows in the Sandvine system are connection flows.

19 Q. On this slide and the evidence underlying this
20 slide, is there any evidence of conversational flows?

21 A. Not in my opinion.

22 MR. BURESH: If you could go to Slide 50,
23 please.

24 Q. (By Mr. Buresh) Did you review the Sandvine
25 source code in this case?

1 A. Yes, sir, I did.

2 Q. And did you review the specific source code
3 reviewed and relied upon by Dr. Almeroth?

4 A. I did. I reviewed all of his source code
5 citations very carefully.

6 Q. And in the source code citations that we're
7 seeing here on this screen, are you familiar with these?

8 A. Yes, sir.

9 Q. Do you see any evidence, whatsoever, in the
10 source code citation of a conversational flow?

11 A. No, sir. This is -- this is basically a
12 reference to the flow table, and this is a connection
13 flow table.

14 Q. Do you see the -- in the upper box, PTSM Flow
15 Manager?

16 A. Yes, sir.

17 Q. What is -- what type of flows does the flow
18 manager operate on?

19 A. Connection flows.

20 Q. Collectively on this slide from Dr. Almeroth,
21 do you see any evidence of conversational flows?

22 A. No, sir. And, I mean, I understand how this
23 flow manager -- this flow table is actually structured
24 in more detail than we see on the screen. And it
25 supports my understanding that it's a connection flow

1 table.

2 MR. BURESH: If we could go to Slide 51,
3 please.

4 Q. (By Mr. Buresh) You see some additional source
5 code on this screen. Have you seen the ptsFlowRecord.h
6 file before?

7 A. Yes, sir, I have.

8 Q. Have you analyzed it?

9 A. Yes, sir.

10 Q. Is there any evidence of a conversational flow
11 in the ptsFlowRecord.h file?

12 A. No, sir. This is the description actually of
13 the flow-entry itself, and it contains information
14 that's related to the 5-Tuple, plus additional
15 information that we've talked about before like the
16 counts. But there's no evidence that there's a
17 conversational flow here. There's only evidence of
18 connection flows.

19 Q. So this ptsFlowRecord.h is the file that
20 actually defines the flow-entries?

21 A. That's right. This -- this structure -- it's
22 a little bit hard to see back here, but there's a
23 structure defined, and that's the flow-entry.

24 Q. Have you analyzed that carefully?

25 A. Yes, sir, I have.

1 Q. In those flow-entries defined by
2 ptsFlowRecord.h, are there any links between flows?

3 A. No, sir, there are no links between flows.

4 Q. Are there any data structures that would
5 bundle one flow to another?

6 A. No, sir, not in the flow-entry table or
7 outside the flow-entry table.

8 Q. Is there any data structure that would provide
9 a mesh around more than one connection flow in this
10 ptsFlowRecord.h flow-entry?

11 A. No, sir, there's not. And there's not such a
12 mesh anywhere in the system.

13 Q. Is the rice ever bagged?

14 A. No, sir, the rice is never bagged.

15 MR. BURESH: Let's go to Slide 52.

16 Q. (By Mr. Buresh) Now, are you familiar with
17 the concept of priming in the PTS products?

18 A. Yes, sir, I am, both from documentation, but
19 also from examining the code.

20 Q. Now, reading this upper description that Dr.
21 Almeroth relied upon, is that an accurate description of
22 priming in the PTS products?

23 A. No, sir, it's not.

24 Q. Why not?

25 A. Well, because there's no pre-creating of flow

1 state in the Sandvine system. And when priming is
2 active, you -- you know the 5-Tuple that you're starting
3 from, but the whole point of priming is to look at a
4 future flow. And for that flow, you don't know the
5 5-Tuple.

6 So the thing they're suggesting that you could
7 pre-create would be impossible to pre-create because
8 some of that information has to be wild-carded, so it's
9 not known.

10 Q. Now, Dr. Nettles, in your methodology, did you
11 try to rely on accurate information?

12 A. Yes, sir, of course.

13 Q. And what is the most accurate information
14 about how the PTS products operate in this case?

15 A. The source code.

16 Q. Is it reliable methodology to rely upon a
17 draft document with technical inaccuracies?

18 A. No, sir, not a -- certainly not a draft
19 document that has clear technical inaccuracies, no, sir.

20 Q. The concept of priming, Dr. Nettles, does the
21 use of priming in the PTS products result in
22 flow-entries for previously encountered conversational
23 flows?

24 A. No, sir. Priming doesn't have anything to do
25 with the flow table or flow-entries.

1 Q. Does priming impact the flow table in any way?

2 A. No, sir, it's -- it's actually in a completely
3 separate address space from -- from the flow table.

4 Q. Is priming used in any way to identify whether
5 a packet belongs to a flow?

6 A. No, sir. It's not part of identifying that a
7 packet belongs to a flow. It's just part of application
8 identification.

9 Q. Within the function of priming, can it even
10 identify two flows at the same time?

11 A. No, sir. The way the system is -- is
12 architected and structured, the prime -- the -- the
13 mechanism that deals with priming only has access to one
14 flow at a time. So it never has two flows.

15 Q. Does priming group or mesh together more than
16 one connection flow?

17 A. No, sir, it doesn't. It provides a hint.

18 Q. The next slide or next section down on this
19 slide is the concept of a tracker. Did you analyze
20 trackers within the PTS products?

21 A. Yes, sir, I did.

22 Q. And using the source code?

23 A. Yes, sir.

24 Q. Does the use of trackers result in
25 flow-entries for previously encountered conversational

1 flows?

2 A. No, sir. And priming is actually one of the
3 -- the -- one of the mechanisms in trackers. They're
4 not really two separate mechanisms. Trackers use
5 priming, but trackers don't -- don't recognize
6 conversational flows.

7 Q. Are trackers used to identify whether a packet
8 belongs to a particular flow?

9 A. No, sir. The only way that you classify flows
10 is based on the 5-Tuple. And that's in a completely
11 different part of the system.

12 Q. Do trackers group or mesh together multiple
13 connection flows?

14 A. No, sir, they don't.

15 Q. Do they link or associate multiple connection
16 flows?

17 A. No, sir.

18 Q. Do they relate more than one connection flow
19 together?

20 A. No, sir.

21 Q. Looking at Dr. Almeroth's Slide No. 52, do you
22 see any evidence of a conversational flow on this slide?

23 A. No, sir.

24 MR. BURESH: If we could go to the next
25 slide, please, No. 53.

1 Q. (By Mr. Buresh) And, Dr. Nettles, in the
2 emphasized or blown-out portion here, is this another
3 discussion of priming?

4 A. Yes, sir. This is from an email that you see
5 in the background.

6 Q. And, again, does priming have anything to do
7 with grouping two flows together?

8 A. No, sir, not into a conversational flow.

9 Q. Does priming result in a bundling or an
10 association of two flows?

11 A. No, sir.

12 MR. BURESH: If we could turn next to
13 Slide 57.

14 THE COURT: Counsel, approach the bench,
15 please.

16 (Bench conference.)

17 THE COURT: Where are you in your direct,
18 Mr. Buresh?

19 MR. BURESH: I've got five minutes left
20 to go, Your Honor.

21 THE COURT: The jury needs a recess.
22 I'll wait until you finish, and then we'll recess, and
23 you can cross after we recess.

24 MR. SKIERMONT: Okay.

25 (Bench conference concluded.)

1 THE COURT: Let's proceed.

2 Q. (By Mr. Buresh) Now, on Slide 57, Dr.
3 Nettles, excuse me, we see some more source code,
4 correct?

5 A. Yes, sir.

6 Q. And were you familiar with this source code?

7 A. I am.

8 Q. In the upper box, do you see that line, it
9 says -- second one down: A flow is defined by the
10 following?

11 A. Yes, sir, this is where the source code --
12 they're actually explaining how they define a flow at
13 Sandvine.

14 MR. BURESH: Could you expand that
15 section out just a little bit more?

16 Q. (By Mr. Buresh) And within the source code,
17 Dr. Nettles, that Dr. Almeroth has -- has cited here,
18 how is a flow defined?

19 A. A flow is defined by the following: Two IP
20 addresses, one for the client, and one for the server;
21 two ports; the source of the client; and the destination
22 on the server; and a protocol, TCP/UDP.

23 Q. What do those five pieces of information
24 identify?

25 A. That's the 5-Tuple.

1 Q. Does that define a connection?

2 A. Yes, sir.

3 Q. Are flows within the Sandvine source code
4 defined in terms of a connection?

5 A. Yes, sir. And we can see that very clearly
6 here.

7 Q. And this is source code cited by Dr. Almeroth,
8 correct?

9 A. Yes, sir, yesterday.

10 MR. BURESH: Your Honor, I pass the
11 witness.

12 THE COURT: All right. Ladies and
13 gentlemen of the jury, we're going to take a short
14 recess before the Plaintiff cross-examines this witness.
15 You may leave your notebooks in your chairs. Follow all
16 my instructions, including not to discuss the case. Use
17 this opportunity to stretch your legs, and we'll be back
18 shortly to continue.

19 The jury is excused for recess.

20 COURT SECURITY OFFICER: All rise for
21 the jury.

22 (Jury out.)

23 THE COURT: We'll make this short,
24 Counsel. The Court stands in recess.

25 (Recess.)

1 (Jury out.)

2 COURT SECURITY OFFICER: All rise.

3 THE COURT: Be seated, please.

4 Mr. Skiermont, you may go to the podium.

5 Let's bring in the jury, Mr. Elliott.

6 COURT SECURITY OFFICER: Rise for the
7 jury.

8 (Jury in.)

9 THE COURT: Please be seated, ladies and
10 gentlemen.

11 We'll now proceed with cross-examination
12 of the witness, Dr. Nettles, by the Plaintiff.

13 Mr. Skiermont, you may proceed.

14 MR. SKIERMONT: Thank you.

15 May we just quickly pass out the binders?

16 THE COURT: Let's do that.

17 MR. SKIERMONT: We should have done it on
18 the break, and we apologize.

19 THE COURT: All right.

20 THE TECHNICIAN: We need the tech screen
21 turned on.

22 THE COURT: Let's proceed.

23 CROSS-EXAMINATION

24 BY MR. SKIERMONT:

25 Q. Good afternoon, Dr. Nettles.

1 A. Good afternoon.

2 Q. You're a paid consultant for Sandvine?

3 A. Yes, sir, I am.

4 Q. How many hours did you spend at \$490 per hour?

5 A. Well, at my deposition, I made an estimate of
6 a hundred hours up to that point, but that estimate was
7 inaccurate, and when I did my billing, it was 150 hours.
8 And I billed recently and my total now is at about 250
9 hours.

10 Q. You also testified on direct that your
11 analysis was independent, right?

12 A. Was independent, yes, sir.

13 Q. Your report where you disclosed your opinions
14 was actually a collaboration between you and Sandvine's
15 counsel, right?

16 A. Yes, sir.

17 Q. And you also testified on direct that you
18 wanted to be independent, and so that's the reason why
19 you didn't talk to Sandvine's CTO before you disclosed
20 your infringement opinion -- opinions in this case; is
21 that correct?

22 A. That's correct.

23 Q. Didn't Sandvine's counsel direct you to look
24 at certain files in the directories of the source code?

25 A. It was a collaborative process, yes, sir.

1 Q. In fact, there are some words in your report
2 that you don't even know who wrote them; is that fair?

3 A. Yes, sir.

4 Q. You haven't taught classes since 2011?

5 A. That's correct.

6 Q. You don't have any formal affiliation with the
7 University of Texas anymore, correct?

8 A. That's correct.

9 Q. That ended in 2013?

10 A. Well, actually, I was an adjunct for a couple
11 of years, but yes, sir.

12 Q. From 2013 to the present, you're basically a
13 consultant who testifies at trial, correct?

14 A. Yes, sir, that's correct.

15 Q. We talked a moment ago about how much time you
16 spent on this matter. And is it accurate that prior to
17 disclosing your non-infringement opinions in this case,
18 you spent about 7 to 13 hours reviewing Sandvine's
19 source code?

20 A. Well, I -- I think that that estimate was low,
21 as I mentioned, so it's probably more accurately 15 to
22 20, but yes, sir.

23 Q. And that code review for 15 to 20 hours
24 occurred over the span of just three weeks?

25 A. Yes, sir.

1 Q. You did not speak with anyone at Sandvine
2 before you disclosed your opinions in this case,
3 correct?

4 A. That's correct.

5 Q. You did not have any conversations with Mr.
6 Bowman about how the PTS products operate prior to
7 formulating your opinions in this case, right?

8 A. That's correct.

9 Q. And nor did you speak with anyone else at
10 Sandvine, other than Mr. Bowman -- Bowman, who knows how
11 the products work, correct?

12 A. That's correct.

13 MR. SKIERMONT: If you would put up Dr.
14 Almeroth's Slide 26.

15 Q. (By Mr. Skiermont) I'm putting up on the
16 screen, Dr. Nettles, the Court's claim construction of
17 the -- of the terms. Do you see that?

18 A. Yes, sir, I do.

19 Q. And the -- the Court construed the claim term
20 "flow-entry database," correct?

21 A. Yes, sir, it did.

22 Q. And the definition of flow-entry database is a
23 database configured to store entries, where each entry
24 describes a flow. Do you see that?

25 A. Yes, sir, I do.

1 Q. And according to your opinion, Dr. Nettles,
2 where the Court's construction uses the phrase "where
3 each entry describes a flow," that does not -- that
4 could be a connection flow, correct?

5 A. Yes, sir, when you look just at the
6 construction, it could be a connection flow.

7 MR. SKIERMONT: Move to strike everything
8 after "yes."

9 THE COURT: I'll sustain the objection.
10 Dr. Nettles, you need to limit your answers to the
11 questions asked.

12 THE WITNESS: Yes, Your Honor.

13 THE COURT: Mr. Buresh is going to get a
14 chance to ask more questions if he chooses to.

15 Let's continue.

16 Q. (By Mr. Skiermont) The flow-entry database,
17 based on your interpretation of the claim language --
18 actually, withdrawn.

19 Can we agree that it's the claims that matter
20 to infringement?

21 A. Yes, sir, each individual claim.

22 Q. And a flow-entry database, according to your
23 analysis of the claim terms in light of the Court's
24 construction, needs to somehow contain or be part of the
25 conversational flow, correct?

1 A. Excuse me. Could you repeat that? I -- I
2 didn't quite follow.

3	Q.	Sure.
---	----	-------

4 The flow-entry database in the claim needs to
5 only somehow contain or be part of the conversational
6 flow, correct?

7 | A. Yes, sir.

8 Q. And the flow-entry database limitation is met,
9 based on your opinion, so long as it has at least two
10 connection flows, right?

11 A. No, sir, that's not correct.

12 MR. SKIERMONT: If you could turn to --
13 bring up Dr. Nettles's deposition 77, 13 to 24.

14 Q. (By Mr. Skiermont) Dr. Nettles, you were
15 deposited in this case, were you not?

16 | A. Yes, sir, I was.

17 Q. And when your deposition was taken, you were
18 under oath, correct?

19 | A. That's correct.

20 Q. And at your deposition, you were asked: You
21 testified that it's your understanding that the flow
22 database needs to somehow contain or be part of the
23 conversational flow. Where are you getting that
24 understanding from?

25 I'm sorry, that's the wrong clip. It was

1 my -- my mistake.

2 MR. SKIERMONT: Ms. Vogtman, it is 77 --
3 oh, I had it right. I'm sorry. Put it back up.

4 Thank you.

5 Q. (By Mr. Skiermont) QUESTION: You testified
6 that it's your understanding that the flow database
7 needs to somehow contain or be part of the
8 conversational flow. Where are you getting that
9 understanding from?

10 And you answered: Well, the -- the flow-entry
11 database is, at a minimum, the database of -- at a
12 minimum, it contains connection flows. And if you're
13 going to have a conversational flow, you have to have
14 more than one connection flow. So my understanding is
15 that the more than one would appear in the -- in the
16 flow-entry database -- as at least two connection flows.

17 Were you asked that question, and did you give
18 that answer under oath?

19 A. Yes, sir, I was asked that question, and I
20 gave that answer.

21 Q. A flow-entry database just has to have -- just
22 has to be a part of whatever data structure or construct
23 makes up the conversational flow because that is where
24 the underlying data about connection flows lives. Do
25 you agree with that?

1 A. In general, yes, sir.

2 Q. The Court's construction simply requires that
3 it be a database configured -- configured to store
4 entries where each entry describes a flow, correct?

5 A. That's the construction, yes, sir.

6 Q. The Court's construction does not say that a
7 database must be configured to store entries where each
8 entry describes a conversation flow, correct?

9 A. That's correct, the construction doesn't say
10 that.

11 Q. A flow-entry database, Dr. Nettles, does not
12 have to contain an entry for a conversational flow. It
13 just has to have something in the flow-entry database
14 that reflects what that conversational flow is, correct?

15 A. I believe I testified to that, yes, sir.

16 Q. The claim, in fact, requires the flow-entry
17 database store the conversational flows in general.
18 Whether it does that by maintaining separate entries of
19 connection flows or just one entry, either are within
20 the scope of the claim, correct?

21 A. I believe I testified to that, as well, yes,
22 sir.

23 MR. SKIERMONT: If you could call up
24 Plaintiff's Opening Slide 16, please, Ms. Vogtman.
25 Plaintiff -- I'm sorry, I misspoke again. The

1 Defendant -- Sandvine's opening slide -- Opening Slide
2 16.

3 Q. (By Mr. Skiermont) I apologize, Dr. Nettles.
4 Bear with me. Ladies and gentlemen of the jury, just...

5 THE COURT: Counsel, don't talk to
6 everybody. Just wait for it to come up.

7 MR. SKIERMONT: Yes, Your Honor.

8 Six -- next one, next one, next slide.
9 Maybe it's 14. It's 15. Thank you.

10 Q. (By Mr. Skiermont) Dr. Nettles, what --
11 when -- what you just agreed with about whether the
12 flow-entry database maintains separate entries of
13 connection flows or just one entry means that you do not
14 agree with the slide from Sandvine's opening, Slide 15,
15 that suggests or argued that conversational flow-entries
16 must be a single entry in the flow-entry database as
17 depicted on the left-hand side of the slide on your
18 screen, right?

19 A. No, sir, I can't agree with that.

20 Q. Dr. Nettles, is it your opinion in this case
21 that the conversational flow must be one entry in a flow
22 table, as depicted in Bob's Facebook conversation on
23 Plaintiff's Opening Slide 15?

24 A. Not in general, no, sir.

25 Q. Conversation flows, Dr. Nettles, do not

1 literally have to be in the flow-entry. There just has
2 to be some way of associating the flow-entry with
3 whatever you're establishing the conversational flow to
4 be. Do you agree with that?

5 A. I think that's what I testified to, yes, sir.

6 Q. And you don't need a pointer. There just
7 needs to be some manifest inside of the system that is a
8 representation of a conversational flow, correct?

9 A. Yes, sir. Again, I think I testified to that.

10 Q. Did you look at the source code for how
11 priming works prior to formulating your opinion?

12 A. I did.

13 Q. Did you analyze the aspect of the Sandvine
14 products called an FTP tracker?

15 A. Yes, sir.

16 Q. And you agree that in the Sandvine products,
17 an FTP tracker creates a wild-carded entry, correct?

18 A. Yes, sir, in the -- a wild card prime entry,
19 yes, sir.

20 Q. And that entry acts as a hint to some future
21 connection flow, correct?

22 A. Yes, sir.

23 Q. Dr. Nettles, you agree that analyzers are in
24 the PTS product -- products, right?

25 A. Yes, sir, they're in the products.

1 Q. And analyzer -- and -- and you agree that the
2 PTSD is a part of the PTS products, correct?

3 A. Yes, sir, of course.

4 MR. SKIERMONT: If you could pull up --
5 actually --

6 Q. (By Mr. Skiermont) Doctor --

7 MR. SKIERMONT: Pull up nothing. Thank
8 you.

9 Q. (By Mr. Skiermont) Dr. Nettles, the -- were
10 you in court when Mr. Bowman was testifying about the
11 network analytics -- what he said were slides about
12 network analytics in the opening statement of Packet
13 Intelligence?

14 A. Yes, sir, I was.

15 Q. And you agree with Mr. Bowman, don't you, that
16 the slide describes analyzers that are based on
17 information from a PTS product?

18 A. Analyzers are a part of the PTS proper, so,
19 yes, sir.

20 Q. Do network analytics products use information
21 from the PTS products?

22 A. They might, yes, sir.

23 MR. SKIERMONT: If you would please call
24 up Dr. Almeroth's Slide 53 -- Dr. Almeroth's
25 Infringement Slide 53.

1 Q. (By Mr. Skiermont) While they're looking for
2 that, Dr. Nettles, I believe that you testified on
3 direct you were asked whether you read Mr. Bowman's
4 deposition in this case?

5 A. Yes, sir.

6 Q. Do you remember that?

7 A. Yes, sir, I do remember that.

8 Q. And -- or actually I think you were asked:
9 Did you review Mr. Bowman's deposition in this case?
10 Right?

11 A. Yes, sir.

12 Q. And you said: Yes, you reviewed it.

13 A. Yes, sir.

14 Q. Did you read all of it?

15 A. Yes, sir, I did.

16 MR. SKIERMONT: Ms. Vogtman, I'm going to
17 have to go back to Dr. Nettles' deposition transcript,
18 Page 36, Line 5 to 14 -- 5 to 8. I'm sorry, it's 5 to
19 8. Page 36, 5 to 8.

20 Q. (By Mr. Skiermont) Dr. Nettles, you were
21 under oath when you were deposed, correct?

22 A. Yes, sir.

23 Q. You were asked: Did you read the entirety of
24 the Bowman deposition that you have listed here?

25 And you answered: I mean, I reviewed the entirety. I

1 certainly didn't read all of it carefully. Much of it
2 was about damages.

3 Were you asked that question, and did you give
4 that answer under oath?

5 A. Yes, sir, I did.

6 Q. And, in fact, you put -- there are some -- in
7 your infringement report, there are some citations from
8 Mr. Bowman's deposition in there. And at least some of
9 those Bowman deposition citations that are in your
10 report were selected for inclusion not by you but by
11 Sandvine's lawyers, right?

12 A. Well, again, the process of creating the
13 report was a collaboration. So I -- I don't remember
14 exactly who selected what, but I'm sure that's true.

15 Q. So you agree that it was a combination of you
16 and Sandvine's counsel that shows which Bowman
17 deposition cites to put into your report?

18 A. Yes, sir.

19 Q. Now, in your direct, you talked about what you
20 said was the Sandvine implementation. Do you remember
21 that?

22 A. Yes, sir.

23 Q. And I believe you had one slide on that in
24 your direct for the Sandvine implementation; is that
25 fair?

1 A. I don't remember exactly how many slides there
2 were actually shown in Court, but much of what I
3 testified to was about the Sandvine implementation.

4 Q. Did you -- the -- the Sandvine implementation
5 that you showed in -- in -- in direct was not a picture
6 that you found in Sandvine's documents, was it?

7 | A. No, sir, it was a demonstrative.

8 Q. And when you were describing the Sandvine
9 implementation, as you characterized it, of the PTS
10 products, did you show the jury any evidence?

11 A. I didn't show any evidence in that particular
12 slide, no, sir.

13 Q. Did you show the jury a single line of
14 Sandvine source code?

15 | A. I did, yes, sir.

16 Q. In rebuttal to Dr. Almeroth's slide?

17 A. That was where I showed the source code, yes,
18 sir.

19 Q. Beyond that slide, was there any other source
20 code displayed?

21 A. I think all the source code that was displayed
22 was in the part where I was rebutting Dr. Almeroth, yes,
23 sir -- or no, sir, sorry, not sure what the sentence is
24 now.

25 MR. SKIERMONT: If you could pull up --

1 if we can get Almeroth's Slide 53, Almeroth Infringement
2 Slide 53.

3 Q. (By Mr. Skiermont) Correct me if I'm wrong,
4 Dr. Nettles, but I do not recall that -- you addressing
5 in direct the -- the document on the left-hand side of
6 Slide 53 here called System Overview, and then there's a
7 diagram below that; am I right?

8 A. I -- I'm sorry, it's a little hard for me to
9 remember exactly what was -- was gone over in direct. I
10 certainly looked at this picture recently.

11 Q. Okay. And in P -- and this is a Sandvine
12 document, correct, on the left-hand side?

13 A. Yes, sir.

14 Q. What this document says is that: The existing
15 Prime -- Prime Infrastructure improves our protocol
16 recognition by correlating a flow without clear
17 signature to a recognized flow using certain flow
18 properties and classification conditions. It also has
19 ability to add prime entries by analyzing the DNS
20 responses for interested queries.

21 That's what that document states, correct?

22 A. Yes, sir, I believe you read that correctly.

23 Q. And do you have any reason to believe that
24 this Sand -- this particular Sandvine -- Sandvine
25 document is inaccurate in some way?

1 A. Well, I don't really know what Sandvine
2 document it is. So can you direct me in my binder so
3 that I can review it?

4 Q. I think it would be in your Almeroth rebuttal
5 slides from your direct?

6 A. Well, do you know what document it is? I --
7 I -- I -- oh, it's PTX- --

8 Q. It's PTX-327.

9 A. -- 327.

10 Q. Yes, sir. But I think from your -- my point
11 is it should be in your direct slides where you're
12 rebutting Almeroth.

13 A. Well, I -- I don't have my direct slides here.
14 That was something that --

15 THE COURT: Gentlemen -- gentlemen --
16 gentlemen, either put it on the screen or approach and
17 hand him a copy of it. But we're not going to sit here
18 and talk all night about where it might be or where it
19 should be or where it isn't.

20 MR. SKIERMONT: Yes, Your Honor.

21 Ms. Vogtman, could you put up Slide 26,
22 which is claim construction, same -- same deck.

23 Q. (By Mr. Skiermont) We -- we spoke a moment
24 ago, Dr. Nettles, about flow-entry database, do you
25 recall that?

1 A. Yes, sir.

2 Q. And now I want to talk a little bit about
3 conversational flows or conversational flow and the
4 Court's construction.

5 A. Yes.

6 Q. And after the middle clause, the "for
7 instance" clause, the construction says: And where some
8 conversational flows involve more than one connection.

9 Do you see that?

10 A. Yes, sir.

11 Q. And do you -- does that imply to you, Dr.
12 Nettles, that -- that there are some conversation flows
13 that do not involve more than one connection?

14 A. Potentially, yes, sir.

15 Q. I think -- I believe you talked about the PTS
16 flow record in your direct, correct?

17 A. Yes, sir.

18 Q. Would you agree with me that there are a
19 number of fields in the PTS flow record?

20 A. Yes, sir, I think I said that on direct.

21 Q. And you would also agree, I think, that none
22 of the slides, your demonstrative slides, depict
23 accurately the full scope of the fields in a Sandvine
24 PTS flow record, correct?

25 A. Yes, sir, I agree with that.

1 Q. And it's also true, isn't it, Dr. Nettles,
2 that the PTS flow record also has sub-fields within its
3 fields, correct?

4 A. Well, yes, sir, that's not really technically
5 precise, I think, but -- but the general concept is
6 present, yes, sir.

7 Q. Let me try again.

8 Some of the fields in the PTS flow record
9 contain sub-fields, right?

10 A. Yes, sir, in a general sense.

11 MR. SKIERMONT: If you could please call
12 up the '789 patent, which is PTX-3, and I believe it's
13 Column 2, Line 42 to 47. PTX-9, Column 2. I'm sorry,
14 it's Column 18. Column 18, Line 12 to 17.

15 Q. (By Mr. Skiermont) Dr. Nettles, I'm referring
16 you now to the portion of the specification. It was in
17 the opening slides, your direct.

18 MR. SKIERMONT: Your Honor, can I get one
19 minute to get this slide situation straightened out?

20 THE COURT: All right. We'll --

21 MR. SKIERMONT: And I can do it in 30
22 seconds probably.

23 THE COURT: Then -- then take that much
24 time.

25 MR. SKIERMONT: Thank you.

1 Thank you. I'm ready to proceed, Your
2 Honor.

3 THE COURT: All right. Let's proceed.

4 Q. (By Mr. Skiermont) This is from the '789
5 patent, and also from Sandvine's opening statement. Do
6 you recognize this section of the '789 patent, Dr.
7 Nettles?

8 A. Yes, sir, I do.

9 Q. And I believe you testified on direct that
10 Sandvine only has connection flows, correct?

11 A. That's correct.

12 Q. And you also said that Sandvine has -- that
13 Sandvine's flow-entry table contains only entries that
14 are from one end point to another end point; is that
15 right?

16 A. Yes, sir, they're all indexed by the 5-Tuple.

17 Q. And you said on direct, I believe, that a --
18 that you put some significance from the patent
19 specification's language that a conversational flow, on
20 the other hand, is the sequence of packets that are
21 exchanged in a direction as a result of an activity, do
22 you recall that?

23 A. Yes, sir, I was explaining that there was a
24 distinction.

25 Q. A distinction between a connection flow and a

1 conversational flow, right?

2 A. Exactly.

3 Q. And was it your understanding of Dr.
4 Almeroth's infringement opinion that he finds no
5 distinction between a connection flow and a conversation
6 flow?

7 A. No, sir, I don't think that I testified to
8 that.

9 Q. And where the specification that has been
10 focused on here several times, the next sentence -- full
11 sentence says: It is desirable to be able to identify
12 and classify conversational flows rather than only
13 connection flows.

14 Right?

15 A. Yes, sir.

16 Q. And would you agree with me, Dr. Nettles, that
17 the conversational flows disclosed in the asserted
18 patents, the building blocks of those conversational
19 flows are connection flows?

20 A. No, sir, I can't agree with that.

21 Q. In your opinion, Dr. Nettles -- or is it your
22 opinion, Dr. Nettles, that the claimed conversational
23 flow correlates multiple connection flows?

24 A. No, sir. I don't believe the word
25 "correlates" appears in the claim construction.

1 Q. The claim construction is actually on the
2 screen, isn't it, by and large? By and large, the way
3 the claim has been construed is a conversational flow is
4 the sequence of packets that are exchanged in any
5 direction as a result of an activity, for instance, the
6 running of an application on a server as requested by a
7 client. That's the first portion of the Court's claim
8 construction order, correct?

9 A. Yes, sir, I agree.

10 Q. And then the -- the claim construction goes on
11 to say: Where in some cases it can be more than one
12 connection.

13 Right?

14 A. Yes, sir, there's some additional language,
15 but that's correct.

16 Q. And do I understand you -- Dr. Nettles, do I
17 understand correctly that you do not believe that any
18 claim in this case requires conversational flows to be
19 in a single entry in a flow-entry database?

20 A. I think that the conversational flow might
21 have a representation that's spread across several
22 entries, yes, sir.

23 Q. Thank you, Dr. Nettles. I don't have anything
24 further.

25 THE COURT: You pass the witness,

1 Counsel?

2 MR. SKIERMONT: I pass the witness.

3 THE COURT: Is there redirect, Mr.

4 Buresh?

5 MR. BURESH: There is, Your Honor.

6 THE COURT: Proceed with your redirect.

7 MR. BURESH: If you could pull up Slide
8 28 from Dr. Nettles' demonstratives, please. Thank you.

9 REDIRECT EXAMINATION

10 BY MR. BURESH:

11 Q. Now, Dr. Nettles, you were just asked a series
12 of questions about the claim term "flow-entry database."

13 Do you see that?

14 A. Yes, sir, I remember that.

15 Q. And I believe the questions were asking you
16 does -- is a conversational flow required by this
17 construction of the flow-entry database. Do you recall
18 those -- those questions?

19 A. Yes, sir, I do.

20 Q. And conversational flow is actually another
21 term, right, in this claim construction chart?

22 A. Yes, sir.

23 Q. And in the claims, these two terms appear
24 together, do they not?

25 A. Yes, sir.

1 MR. BURESH: Now, if we turn to the 7 --
2 let's go to the '751 patent, which is PTX-7. And I'd
3 like to go to Claim 1, please. If we could focus in on
4 Limitation (b) of Claim 1, please.

5 Q. (By Mr. Buresh) Now, at the beginning of this
6 claim, it says: For each received packet, looking up a
7 flow-entry database.

8 Correct?

9 A. Yes, sir.

10 Q. So that term "flow-entry database" is right
11 there?

12 A. Yes, sir.

13 Q. And the Court's construction didn't include
14 the words "conversational flow," correct?

15 A. That's correct.

16 Q. And then the claim limitation goes on: For
17 containing one or more flow-entries for previously
18 encountered conversational flows, correct?

19 A. Yes, sir.

20 Q. And the Court offered a construction -- excuse
21 me -- provided a construction for conversational flows;
22 is that correct?

23 A. Yes, sir.

24 Q. This claim limitation requires one or more
25 flow-entries for previously encountered conversational

1 flows, does it not?

2 A. Yes, sir, exactly.

3 Q. And in the Sandvine PTS products, did you find
4 any flow-entries for previously encountered
5 conversational flows?

6 A. No, sir, I did not.

7 Q. Now, Dr. Nettles -- excuse me, in your
8 deposition, I believe it was referenced that you said a
9 conversational flow requires a manifest representation.

10 Do you recall that?

11 A. Yes, sir, I do.

12 Q. What do you mean by a manifest representation?

13 A. Well, I mean, that there needs to be something
14 that you can actually point to and -- and manipulate.

15 In your analogy, you can't just have grains of
16 rice. You have to have that little mesh sack someplace
17 explicitly.

18 Q. To satisfy the requirement of a conversational
19 flow, does there need to be something that bundles
20 connection flows together?

21 A. Yes, sir, there does.

22 Q. If you have only connection flows that are not
23 bundled together, isn't that the prior art that was
24 described by the inventors?

25 A. Yes, sir, it is.

1 Q. If you have a conversational -- or a set of
2 conversational flows that are not bundled together, is
3 that a conversational flow?

4 A. I believe you meant to say a set of connection
5 flows.

6 THE COURT: If you don't understand, say
7 you don't understand. Don't correct the question.

8 THE WITNESS: I apologize, Your Honor.

9 Q. (By Mr. Buresh) Let me rephrase. If a set of
10 connection flows is not bundled together in any way, is
11 there a conversational flow?

12 A. No, sir.

13 MR. BURESH: Could we go back to the
14 claim construction slide we were on a moment ago?

15 Q. (By Mr. Buresh) At the tail end of Judge
16 Gilstrap's construction of conversational flow, we see
17 the phrase: And some even involve more than one
18 exchange of packets between a client and server.

19 Do you see that?

20 A. Yes, sir, I do.

21 Q. And I believe you were asked the question:
22 Could there be a conversational flow that is only a
23 connection flow -- only one connection flow?

24 Do you recall that question?

25 A. Yes, sir.

1 Q. If you have only one connection flow, does it
2 satisfy the requirement that some involve more than one
3 exchange of packets between a client and server or more
4 than one connection? Does it satisfy that if there's
5 only one connection flow?

6 A. Well, this says some even involves, so this
7 doesn't really restrict it to the possibility that it
8 has to have more than one, but my understanding is that
9 for infringement, the system has to be able to support
10 conversational flows that have more than one.

11 MR. BURESH: If we could turn to Dr.
12 Almeroth's Slide 53. Could you go to Slide 54, please,
13 actually?

14 Q. (By Mr. Buresh) Now, Dr. Almeroth (sic), you
15 were actually questioned about this slide during the
16 cross-examination. Do you recall that?

17 A. Yes, sir, I do.

18 Q. And this -- I'm just going to ask you to look
19 at the first line here, prime infrastructure.

20 A. Yes, sir.

21 Q. Are you familiar with priming?

22 A. Yes, sir, I am.

23 Q. Did we talk about priming during your direct
24 examination?

25 A. We did.

1 Q. Does priming combine any two connection flows
2 together?

3 A. No, sir, it doesn't.

4 Q. If Dr. Almeroth is -- is pointing to a priming
5 infrastructure, is that evidence of a conversational
6 flow?

7 A. No, sir, not as implemented in the Sandvine
8 system.

9 MR. BURESH: Your Honor, I pass the
10 witness.

11 THE COURT: Is there further
12 cross-examination?

13 MR. SKIERMONT: Nothing further, Your
14 Honor.

15 THE COURT: All right. Dr. Nettles, you
16 may step down.

17 All right. Ladies and gentlemen, my
18 clock says 6:00 o'clock on the dot. That's a good time
19 to stop.

20 If you will, leave your closed notebooks
21 on the table in the jury room as you exit the courtroom.
22 Follow all my instructions. Of course, you'll expect me
23 to remind you again not to discuss the case with anyone.

24 And I'll ask that you be back tomorrow
25 just as you were today ready to go at or as close to

1 8:30 as possible.

2 Travel safely, have a good night, and
3 you're excused until tomorrow morning.

4 COURT SECURITY OFFICER: Rise for the
5 jury.

6 (Jury out.)

7 THE COURT: All right. Be seated,
8 please.

9 Mr. Buresh, I understand you have one
10 more witness, and then you expect to close your
11 case-in-chief; is that correct?

12 MR. BURESH: That is correct, Your Honor.

13 THE COURT: All right. Does Plaintiff
14 have an idea of what its rebuttal case may or may not be
15 at this point?

16 MR. DAVIS: Yes, Your Honor, we do.

17 THE COURT: Tell me what to expect.

18 MR. DAVIS: You can expect some rebuttal
19 testimony from Dr. Almeroth, that should last 30, 45
20 minutes, and then potentially some rebuttal testimony
21 from Mr. Bergman that will last, again, 30 to 45
22 minutes.

23 THE COURT: Does either side see a
24 problem with getting -- if we start promptly around 8:30
25 seeing -- does anybody see a problem with finishing the

1 evidence from both sides by or close to noon tomorrow?

2 MR. DAVIS: No, Your Honor.

3 MR. BURESH: No, Your Honor.

4 THE COURT: Okay. That's -- that tells
5 me what I need to know.

6 Are there questions from either party
7 before we recess for the evening?

8 MR. DAVIS: No, Your Honor.

9 MR. BURESH: No, Your Honor.

10 THE COURT: I'll look for the revised
11 charge and verdict form, as I instructed earlier, by
12 10:00 o'clock tonight. And I'll be available in
13 chambers by 7:30 tomorrow if there are unresolved issue
14 that require the Court's intervention and guidance.

15 Other than that, Counsel, we stand in
16 recess until tomorrow.

17 COURT SECURITY OFFICER: All rise.

18 (Recess.)

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CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of my ability.

/s/Shelly Holmes

SHELLY HOLMES, CSR, TCRR

OFFICIAL COURT REPORTER

State of Texas No.: 7804

Expiration Date: 12/31/18

11/7/17_____
Date